

OHIO STATE
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OCT 7 1930

Electrical Contracting

October
1930

With Which Is Incorporated
The Electragist



The Mark of
QUALITY

—for many years on Bare
Copper Wire, now on Insulated
Wire and other Wiring Products
for every construction use.

ANACONDA WIRE & CABLE COMPANY

General Offices: 25 Broadway, New York City
Chicago Office: 20 North Wacker Drive Building

Sales Offices in Principal Cities

Why grope in the dark?

... in the
old fashioned way



The Hubbell Receptacle
Slot-Finder guides blades
with the accuracy of a magical hand

ONE hopeless attempt to insert an attachment plug in an old style receptacle will immediately convince you of the sales advantage offered in the new Hubbell Convenience Outlet.

Why ask your customers to grope in the dark when the greatest inconvenience has been banished from receptacles by the Hubbell Slot-Finder. No groping, no waiting—press the cap anywhere against the face of the receptacle and in go the blades as if guided by a magic hand.

This feature, together with the modernistic Bakelite design, the moisture-proof composition base, easier wiring facilities, make it an outstanding achievement in wiring devices.

HARVEY HUBBELL, INC.
BRIDGEPORT, CONN.

Mail Coupon to nearest office. Main Office: Bridgeport, Conn.

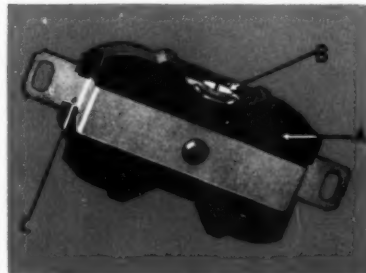
Boston, Mass.
176 Federal St.
Atlanta, Georgia
118 Marietta St.
H. C. Biglin
New York City, N. Y.
122 East 42nd St.

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Philadelphia, Pa.
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Garnett Young & Co.



ONE-PIECE CONTACT SPRING—Guarantees perfect alignment and a positive electrical connection. Made of finest phosphor bronze.



A—NEW SOLID COMPOSITION BASE, moisture-proof, eliminates the fibre back.

B—BETTER WIRING AND INSULATING FACILITIES. Larger screws to hold No. 10 wire. Binding plates and screws in deep pockets with heavy side bosses of composition, well protected and insulated from side of wall and box. Wide Bakelite barriers insulate wiring cavity from face plate. Tapped bushing for plate screw is grounded to mounting strap, grounding the plate.

C—MOUNTING STRAP LOCKED TO FACE, for greater strength and rigidity.

HUBBELL convenience OUTLETS

Electrical Contracting

With Which Is Incorporated The Electragist

Victor A. Hanson,
Managing Editor

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Editor and General Manager

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Eastern Field Editor

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Western Field Editor

Vol. 29

OCTOBER, 1930

No. 12

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RESALE PRICE NEWS

A fluctuation of prices, both up and down, has been noticeable during the past month. Reductions have been made in:

Entrance and service fittings
Grounding fittings
Surface snap switches
Lead and rubber covered wire.

Minor price changes, both up and down, have been made in panel boards.

Flush tumbler and push switches prices have been adjusted with slight increase in price.

A number of price increases have been made in single throw switches.

Prices of single point screw brackets show a slight increase.

Frank Adam fuse boxes have been added to the listings.

A recent survey shows that the Resale Price Service is nationally used. Even on the Pacific Coast, where freight rates, etc., would be expected to render it less accurate, it is used by 80 per cent of the contractors.

Published monthly. Entered as second class matter November 14, 1923, at the post office at Chicago, Illinois, under the Act of March 3, 1879. Copyright, 1930, by The Electrical Trade Publishing Company.

Subscription: U. S., \$3.00; Foreign, including Canada, \$3.50. Single copies, 30 cents.

Member Audit Bureau of Circulations, National Publishers' Association.



ELECTRICAL TRADE PUBLISHING COMPANY

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Also publishers of *The Jobber's Salesman* and *Mill Supplies*

6

WIRING SYSTEMS and FITTINGS for EVERY CONCEIVABLE REQUIREMENT

1

RIGID STEEL CONDUIT

- a THERMADUCT ZINC TREATED AND CLEAN ENAMELED
- b ECONOMY BLACK ENAMELED
- c QUALIDUCT UNDERPLASTER DUAL CONDUIT THREE WIRE SYSTEM
- d DUCT FOR UNDERFLOOR CIRCUITS HIGH AND LOW POTENTIAL

2

FLEXIBLE STEEL CONDUIT

- a FLEXSTEEL FLEXIBLE STEEL CONDUIT SINGLE STRIP
- b STEELFLEX AND BRASSFLEX FLEXIBLE CONDUIT FOR AUTOMOBILE WIRING
- c FLEXIBLE STEEL HEATER AND CARBURETOR TUBING TIGHTLY JOINTED FOR CARRYING GAS
- d FLEXIBLE STEEL TUBING FOR GASOLINE HOSE LINING HEAVY CONSTRUCTION TIGHTLY JOINTED

3

A B C ARMORED CABLE

- a NATIONAL FLEXSTEEL A B C DOUBLE ARMORED CABLE WITH HEAVY ARMOR AND ANTI-SHORT BUSHING
- b QUALIFLEX FLAT STEEL ARMORED CABLE FOR SURFACE AND UNDERPLASTER TWO OR THREE WIRE CIRCUITS
- c ARMORED LAMP CORDS PROTECTED BY ANTI-SHORT BUSHING

4

METAL MOLDING

- a FLAT WALLACE FINISH WIRE SEPARABLE CAP AND BASE

5

NON-METALLIC FLEXIBLE TUBING

- a FLEXITUBE FLEXIBLE WOVEN TUBING IS MOISTURE AND FLAMEPROOF PROTECTION TO WIRING
- b AUTODUCT TIGHTLY WOVEN FLEXIBLE TUBING HIGH LUSTER LACQUER FINISH FOR AUTOMOBILE WIRING INDUSTRIAL AND FLAMEPROOF

6

NON-METALLIC SHEATHED CABLE

- a R G W LOOMWIRE CONDUCTORS PAPER WRAPPED AND ENCLOSED IN HEAVY TREATED OVERALL BRAID KINKABLE WIRE FOR GROUND RETURN
- b LOOMWIRE NON-METALLIC SHEATHED CABLE PAPER WRAPPED ENCLOSED IN HEAVY TREATED OVERALL BRAID
- c CARLIFE AUTOMOBILE STARTER CABLE KRAFT WRAPPED LOOM BRAID WITH HIGH LUSTER LACQUER
- d FLEXLAY UNDERGROUND CABLE NON-METALLIC ASSEMBLY, CHEMICALLY TREATED

BARE
RUBBER COVERED
WEATHERPROOF
FLEXIBLE CORDS

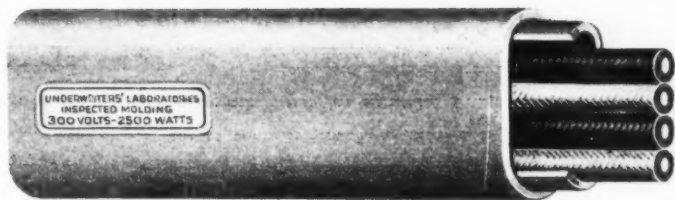
Wires and Cables

LEAD COVERED
PARKWAY.
PAPER AND
CAMBRIC

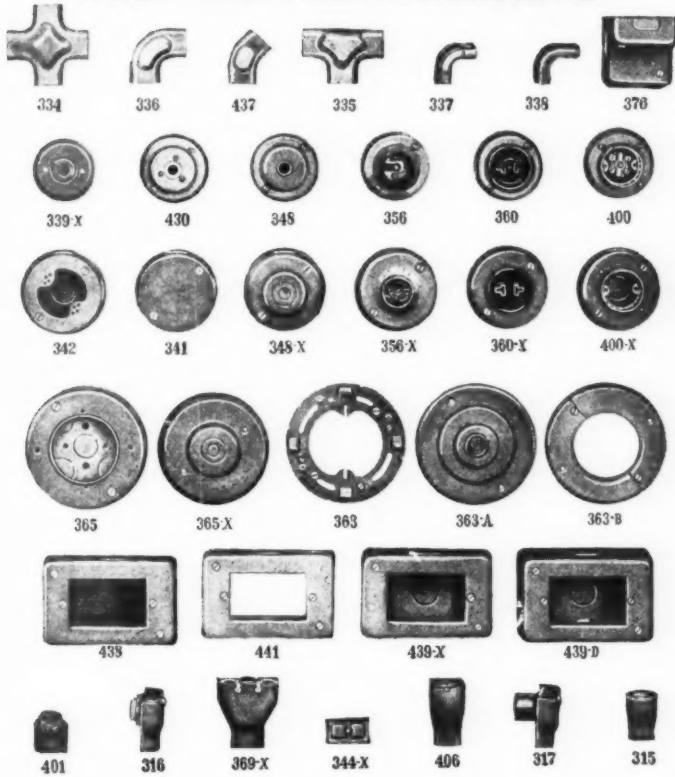
NATIONAL
ELECTRICAL
SYSTEMS
WIRING
CABLES

UMI

4 METAL MOLDING



333 METAL MOLDING



and FITTINGS

National Electric Products Corporation
 National Metal Molding Division
 Pittsburgh, Pa.

CONDUIT

NEPCODUCT

OVALDUCT

BONDNUTS & BUSHINGS

OUTLET BOXES

ARMORED CABLE

ARMORED CABLE FITTINGS

ECONOMY BOXES

BAR HANGERS

SWITCH BOXES

OVAL ARMORED CABLE

FLEXIBLE METALLIC CONDUIT

FLEXIBLE METALLIC TUBING

METAL MOLDING

FITTINGS & DEVICES

NON-METALLIC FLEXIBLE TUBING

NON-METALLIC SHEATHED CABLE

WIRES & CABLES

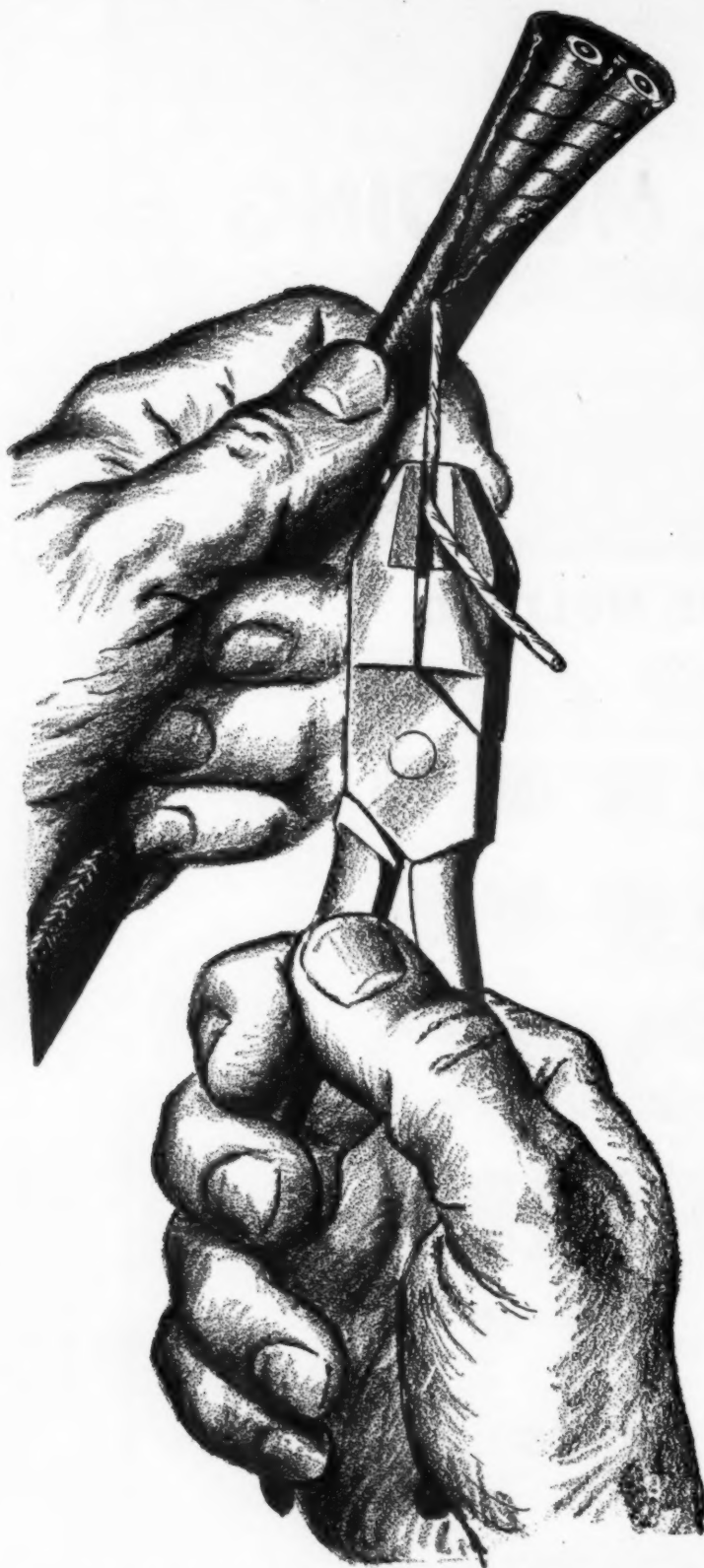
FLEXIBLE LAMP CORDS

PORTABLE CORDS

FLEXLAY DITCH CABLE

PARKWAY CABLE

BRACKETS



RIP! and the ROMEX conductors are free

The RomeX rip cord doesn't break. It is strong, unyielding hemp. It will strip the tough outer sheathing as fast as it is pulled. The stout kraft wrap over the individual conductors spins off with a single pull—and there you are!

RomeX is easy to handle, quick to install. Preparing the ends for connection to boxes is simple. The whole job is done *faster* with RomeX.

Light in weight, extremely flexible, easy to "fish" through tight places. No special fittings are needed. All these things add to the *ease* and *speed* of RomeX installation.

RomeX offers you the chance for more sales oftener.

GENERAL CABLE CORPORATION

EXECUTIVE OFFICES: 420 LEXINGTON AVENUE, NEW YORK • OFFICES IN PRINCIPAL CITIES



The 3 Servants

A RICH man, so the Bible says, before starting on a journey gave to one servant five talents, another three and the third one talent. Upon his return he asked for an accounting.

The story goes that the one to whom five talents had been given put them to work and made them produce five more. Likewise, the one with three talents by hard work made 100 per cent profit. But the little fellow with only one talent was so afraid that he might lose the little that he had that he hid his capital and because it was not put to work, he made no profit, and eventually lost to the others all his capital.

That isn't fiction—that's business.

The only concerns which can live this year and next are those which can make a profit. They must put their resources to work. They cannot hide, even for a short period, for the moment they begin to be afraid they start slipping and their competitors will get the business.

• • •

MANY a failure of 1931 and the next five years will have its foundation in 1930 fear. The 1930 workers will be the 1931 profit-makers.

Electrical contractors who have waited on the new building market have had tough sledding, but all contractors have not waited. Those who, when business would not come

to them, went out after business have found what they were looking for.

Many contractors have found this a good time to specialize—and the specialists are busy. We recommend these contractors to the manufacturers as the best market to cultivate. These contractors having made progress in hard times will take the lead in good times.

• • •

AT the same time we caution the electrical manufacturers not to hide their talents. At this season advertising appropriations are being considered for next year. If 1931 is to be a year of business revival, the advertising must be geared up to do a job. It cannot be expected to assist the sales department if it is weak for want of a sufficient appropriation.

It is wisdom to question each expenditure to be sure of its value but once a manufacturer is convinced of the value of a field and the publication serving it, he should give his advertising every opportunity of making good.

ELECTRICAL CONTRACTING encourages manufacturers to study their advertising list with the greatest of care, cutting off these publications which cannot economically justify their place on the list and increasing the appropriation in publications that do justify their position.

In that way will a manufacturer put his talents to their best use and receive the greatest return.

IN OUR NEW MILL AT MARION INDIANA



ANACONDA WIRING PRODUCTS

Rubber-covered Wire
Flexible Cords
ABC Armored Cable
Durax Sheathed Cable
Duraduct Loom
Duracord Heavy-duty
Cord

NEW MACHINERY NEW METHODS

IMPROVED machinery and tried-and-tested manufacturing methods make our Marion plant as fine as any in the country. And the successful policies and practices, which made the products from our PAWTUCKET, RHODE ISLAND mill so acceptable, are also in effect here.

From either of these two fine, modern plants, strategically located for prompt service to the entire industry, you can secure rubber-covered wire and portable cords of the same dependable quality, the kind that *speed up wiring jobs!*

Our Marion mill also makes a complete line of Parkway and Varnished Cambric Cable.

ANACONDA WIRE & CABLE COMPANY

GENERAL OFFICES: 25 BROADWAY, NEW YORK CITY
CHICAGO OFFICE: 20 NORTH WACKER DRIVE BUILDING

Sales Offices in Principal Cities

OCTOBER, 1930

Use Business Magazines to Sell LIGHTING

says John Wise

LIKE der cat vot stole der canary bird's cream you look, Ch-ohn," said Moe Unterbidder as John Wise, the town's most successful contractor, joined the party at the lunch table.

"Yeah," replied John, "I just this morn- ing picked two good jobs from a customer's waste basket."

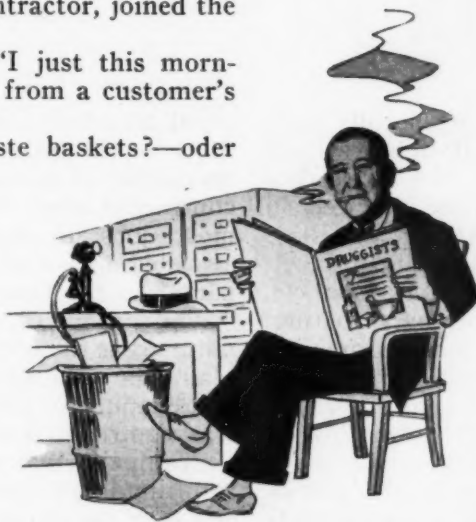
"Vas you virin' up vaste baskets?—oder maybe equipping 'em mit motors already?"

"You see, it was this way," said John.

"I got a 'phone call from Bill Maynard's drug store to come up an' see what kinda bugs had got into his soda fountain coolers, and when I got there Bill was busy so I sat down by his desk to wait, and while I waited I happened to see a little trade magazine in the waste basket—a magazine just like ELECTRICAL CONTRACTING, only printed for druggists.

"Well," continued John Wise, "Havin' nothing to do I fished it out and thumbed it over, and here was a swell article telling these druggists why they ought to use better lighting—what it meant to them in increased trade and profit. I stuck it in my pocket.

"After I'd fixed the cooler—simple adjust- ment that took about a minute—I pulled out this magazine and I says, 'Bill, did you read this here? . . . 'What about it?' says he . . . 'If



you'd read it you'd know what about it,' says I, and with that I started to give him a sales talk on better lighting, using his own magazine to back me up.

"Well, do you know, I got a nice little light- ing job outa Bill, and that cheered me up so that I went to every druggist in town with the same spiel and I got another job from Fenderbosch.

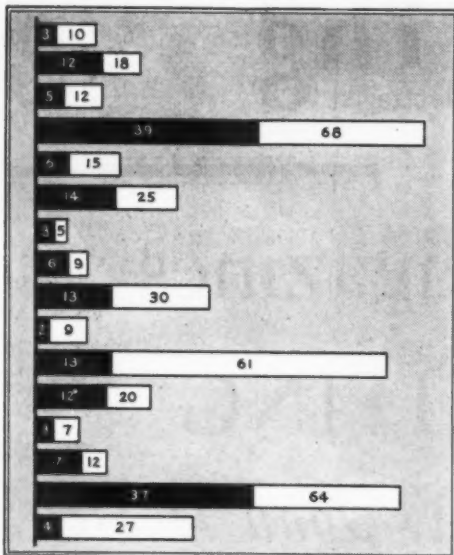
"That set me think- ing. I went down to the library and found

files of a lot of other trade magazines—indus- trial plant papers and chain store men's papers and papers for fellas that own office buildings and what not—and a lot of 'em had articles telling these men why they oughta use better light.

"Men, these papers are helping us sell light —they're working for us without pay. Now, I—"

Moe Unterbidder hastily gulped the last swallow of coffee in his cup and wiped off his chin.

"I think maybe I go down yet by der library," he remarked as he pushed back his chair.



In most instances the number of jobs received were proportional to the number of calls made. The columns represent the number of calls made and the shaded portions the number of jobs obtained by the individual contractors in last year's campaign.

4 out of every

That commercial lighting business is available if the contractor will go after it is shown in the results of three annual commercial lighting campaigns conducted by the Electrical League of the Tri-Cities in Rock Island and Moline, Ill., and Davenport, Ia.

FORTY-FOUR percent of the calls made in the three commercial lighting campaigns conducted by the Electrical League of the Tri-Cities have resulted in wiring jobs averaging \$193.00 each. In these three campaigns, totaling 26 weeks of effort, more than \$110,000 worth of work has been obtained by the 16 contractors participating.

The work of the league is mostly supervising in character. It directs the mail campaigns and sees to it that the contractors are given every assistance. The contractors do the actual soliciting and selling.

The first year the campaign lasted 11 weeks during which time 383 calls on merchants were made. Temporary lighting demonstration stores were opened in each of the three cities and comparative window lighting installations were installed in several merchants' windows. Contractors were assisted in selling by manufacturers' representatives and two central station lighting specialists. The mailing pieces consisted of four regular bulletins prepared by the Society for Elec-

trical Development, supplemented in proper sequence by six mailings of manufacturers' literature. A quota of jobs was allotted each contractor and the contractor getting the most jobs in relation to his quota was awarded a cash prize. The cost of the campaign for the first year totaled \$1,491.00.

The second year demonstration stores were not used as there were numerous installations made the first year which served as excellent examples. The duration of the campaign was also reduced to eight weeks. Otherwise, the campaign was similar to the previous year resulting in 245 jobs amounting to \$53,600.00 at a total campaign cost of only \$394.00.

The third year was similar to the second

Individual Results of 192

CONTRACTOR NO.	1	2	3	4	5	6	7
Contractors Quota of job.....	15	30	20	30	20	20	15
Number of Calls.....	10	18	12	68	15	25	5
Number of Jobs.....	3	12	5	39	6	14	3
Percentage of Job Quota Obtained..	20%	40%	40%	130%	30%	70%	20%
Total Wattage Increase.....	1400	36350	17000	35200	3870	1215	200
Total Amount Contracts.....	\$132	\$5423	\$1415	\$2692	\$660	\$126	\$63

MORAL: THE MAN WHO GOES AFTER THE BUS

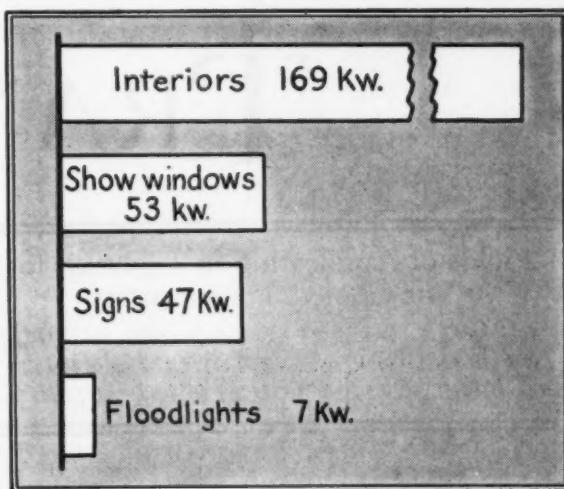
9 calls bring \$193 Lighting Jobs

Results of three Commercial Lighting Campaigns

	1927	1928	1929
Number of Merchants on Mailing List.....	1300	1300	1300
Number of Calls on Prospects.....	383	508	394
Percentage Called Upon.....	29%	37%	30%
Jobs Resulting	156	245	169
Percentage of Jobs with Respect to Calls Made....	41%	48%	43%
Number of Enclosing Globes.....		1025	667
Number of Show Window Reflectors.....		641	291
Duration of Contest.....	11 weeks	8 weeks	7 weeks
Estimated Cost of Jobs.....	\$16,500.00	\$53,600.00	\$39,918.50
Load Increase	205 K.W.	444 K.W.	276.5 K.W.
Cost of Campaign.....	\$1,491.00	\$394.00	\$632.59

except that the period was reduced to seven weeks. From 394 calls, 169 jobs were obtained amounting to \$39,918.50. The cost of this campaign was \$632.59.

This year another campaign is under way which is similar to the previous one except that an effort is being made to get more manufacturers' representatives to assist the contractors. The mailing pieces, too, are being prepared specially by the league and the mailing list is being revised and reduced. The mail campaign is not of the prospect-getting character but rather an introduction for the contractor and lighting salesmen to the prospect.

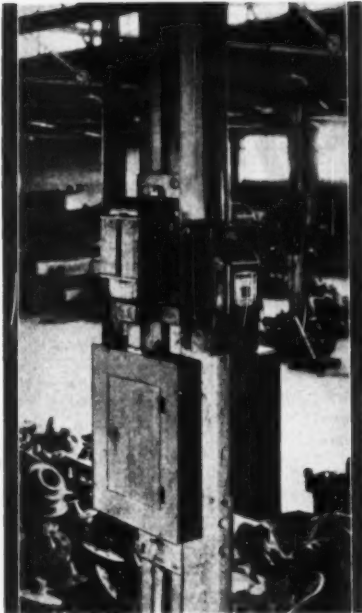


All classes of commercial lighting are obtained as a result of the campaigns. The chart shows the wattage increase installed in last year's campaign.

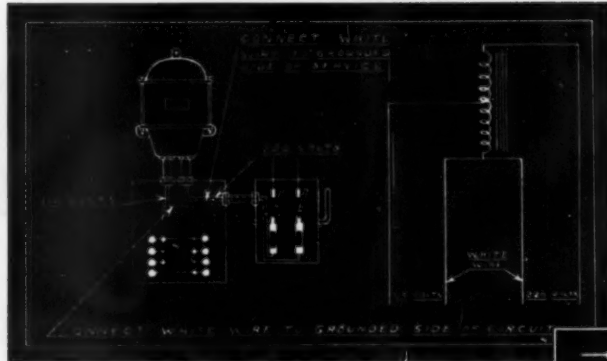
Results of 1929 Campaign

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Totals
6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
20	15	15	30	20	30	25	15	20	30	20	355						
25	5	9	30	9	61	20	7	12	64	27	394						
14	3	6	13	2	13	12	3	7	37	4	179						
70%	0%	40%	43.5%	10%	43.5%	56%	20%	35%	123%	20%							
1215	000	8660	6715	10500	23950	37400	1800	25500	47760	5400	276555						
\$125	463	\$709	\$1355	\$553	\$2278	\$8033	\$123	\$3880	\$10438	\$502	\$39918						

THE BUSINESS BRINGS HOME THE BACON!



Air cooled transformers can be installed right where the change in voltage is needed. No vaults or enclosures are required. On this column are mounted two 5 K.V.A. transformers. Two similar transformers are installed elsewhere in the same building.



Connection diagram of single phase, auto transformer, 220 volt grounded to 110 volt grounded, showing how certain types of auto transformers meet the requirements of the Code when used in connection with polarity wiring and the 220 volt service has one wire grounded.

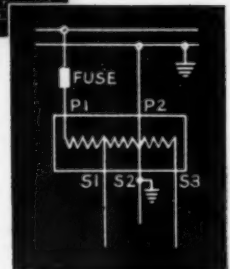


Diagram of single phase auto transformer 230 volts grounded to 115—230 volts 3-wire grounded. P2 and S-2 should not be fused.

The use of TRANSFORMERS in

Fields of Application in Lighting for Air-Cooled Transformers

FACTORIES STREET LIGHTING MILLS
AIRPORTS PRINTING ESTABLISHMENTS
POWER PLANTS COMMERCIAL BUILDINGS

Air cooled transformers power supply voltages for lighting circuits re-economy in distribution Their application is ex-talla-

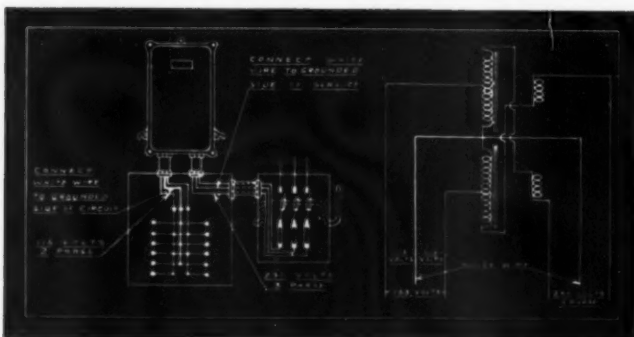
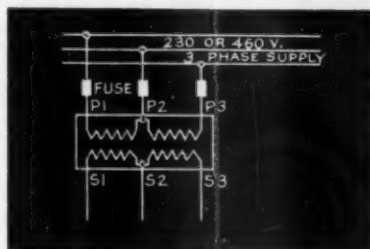
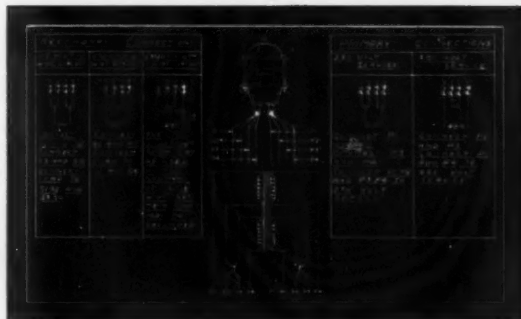
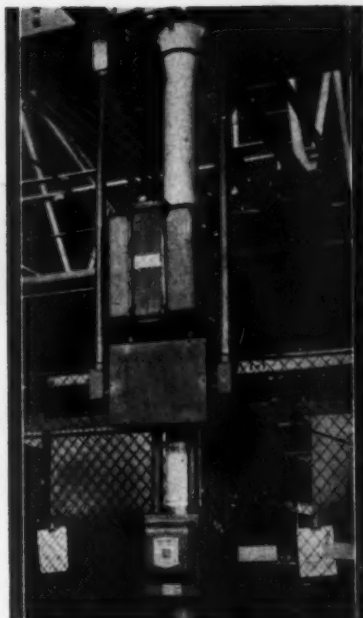


Diagram illustrates a 3-phase auto transformer which meets the requirements of the Code when used in connection with polarity wiring on a system which has one wire of the 220 volt system grounded. This transformer has a 2-phase 3 wire secondary which enables the load to be distributed equally on all three phases of the system with the use of the ordinary 3 wire distribution panel and the common or neutral may be grounded. If the 3-phase system does not have one wire grounded, or is of a voltage higher than 250 volts, insulating transformers of the same type are used.

Diagram of the use of 2-single insulating transformers as a 3-phase unit, in one case, to convert 230 or 460 volts grounded or ungrounded to 115 or 230 volts grounded or ungrounded. When used to supply a 3-wire lighting system, wires P-2 and S-2 carry 73 per cent more current than the outside wires.



Single phase, insulating transformer diagram shows how the standard insulating transformer can be connected for either 230 or 460 volt service and the secondary is interchangeable for either 115 volt 2 wire or 230 volt 2 wire or 115/230 volt 3 wire. This makes the transformer very flexible to meet a variety of applications.

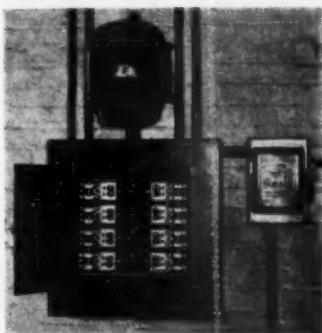
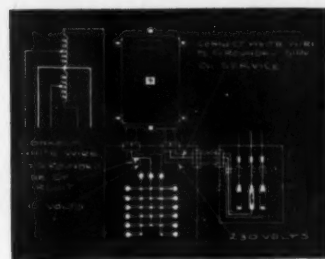


Air cooled transformers are not limited to small sizes. They are available up to 500 K.V.A., sizes up to 50 K.V.A. usually being carried in stock. In this installation a 20 K.V.A. transformer is used.

of AIR COOLED S in LIGHTING

are used to convert
into operating voltages
resulting on considerable
and in power rate.
tremely flexible and in-
tion easy

Diagram illustrating an auto transformer that can be used on either 3-phase or 2-phase 3-wire and meet the requirements of the Code if used in connection with polarity wiring, and has one wire of the 3-phase system or the common wire of the 2-phase system grounded. With this type of transformer used on a 3-phase system, the load is not equally distributed on all three phases. The one wire used as a common carries 73% more current than either of the other two. This transformer consists of 2 single phase units interconnected in one case.



The installation of a single-phase transformer supplying 110 volts direct to the lighting cabinet from higher voltage feeders permitting a more efficient distribution.

The installation of a 3-phase transformer supplying 110 volts to the lighting cabinet from a 220 volt, 3-phase supply.

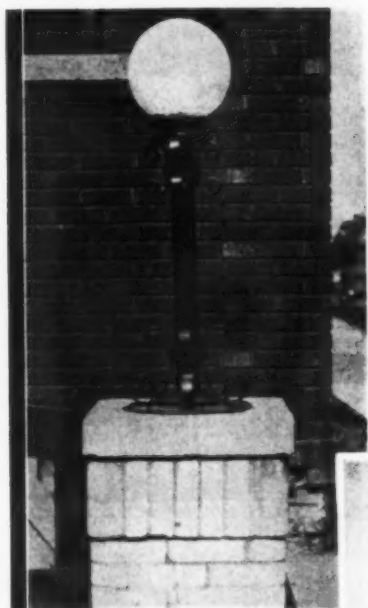




SER.

One of the most satisfactory means of lighting service stations is by floodlighting. These 4 enclosed type floodlights fitted with diffusing lenses light this service station with a pleasing brilliancy. For a station with a large yard these lights should be supplemented with several open type floodlights. Ornamental floodlight standards improve the appearance of the installation. A satisfactory intensity for lighting the service station building is from 10 to 15-foot candles.

improve the appearance of the installation. A satisfactory intensity for lighting the service station building is from 10 to 15-foot candles.



Short standards are frequently used to mark driveway entrances. These standards, being largely ornamental, are seldom more than 5 or 6 feet high.



Globe lights used in outlining the extremities of the service station yard are attractive, yet do not contrast too greatly with the lighting of the building.



The pump and adjacent area should be well lighted. This is best done by dome or angle reflectors mounted on standards directly over the pumps.

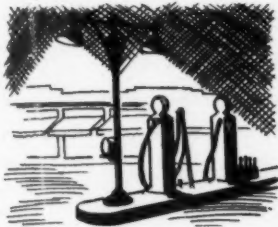


The use of lighting standards to light driveways and entrances are employed to best advantage when lighting units are used as a part of the ornamental effect. Standards are essential if the ornamental effect of the light itself is desired and add distinction to the station.

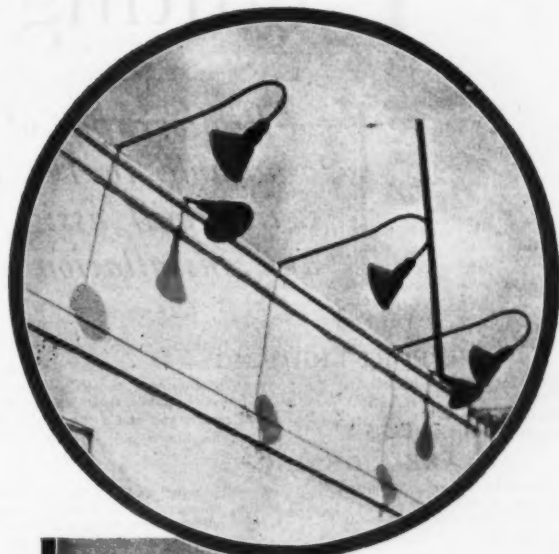
R-VICE STATION

Lighting

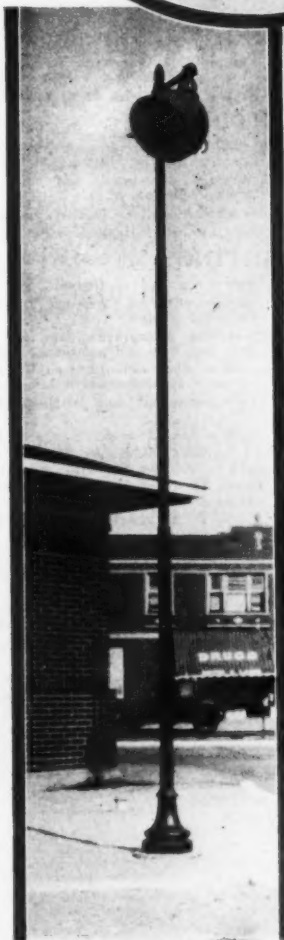
There are many types of lighting applicable to service stations. Each type has its advantages depending on the degree of utility and ornamental effect desired



Globe lights mounted on the building illuminate the building to a degree, at the same time are in themselves ornamental. This type of lighting should not be used if it is desired to make the building itself stand out by means of illumination. In such instances the direct rays of ornamental lights distract from the illumination of the building.



Small reflectors are sometimes suspended from the roof to light the building and immediately surrounding area, especially when the building has been reconstructed or is a part of a garage.



Open type floodlights mounted on standards are useful in lighting yards and driveways. They are particularly satisfactory where an even distribution in large yards is desired. A 2 to 4-foot candle intensity is satisfactory for yards and driveways. In general a floodlight equipped with a 1,000-watt lamp is satisfactory in lighting from 2,000 to 4,000 square feet of yard or driveway.

A Library for the **Lighting Specialist**

*A Bibliography of Lighting Literature
available to the electrical contractor
which will assist in the sale, design
and installation of adequate lighting*

TITLE	CONTENTS	ISSUED BY:
AIRPORT LIGHTING:		
Lighting equipment for airports.	Lays, photographs, dimensions and equipment for hangars, fields, airways, air-plane factories, public areas and airway signs	Benjamin Electric Mfg. Co.
Floodlighting	Layout, photograph and data on field lighting	Pittsburgh Reflector Co.
Airport and Airway Lighting	Photographs, dimensions, intensities and equipment for field and airway lighting	Crouse-Hinds Co.
BANK LIGHTING:		
Unusual Lighting for a Bank	Data and photographs on modern bank lighting	Curtis Lighting
Permafactor Lighting Bank	Lays, photographs, dimensions, data and equipment for bank lobbies, cages, windows, offices, advertising and floodlighting	Pittsburgh Reflector Co.
Number June, 1930		
Lighting Book	Section includes lays, photographs, intensities, and equipment for banks	Curtis Lighting
CLUB LIGHTING:		
Lighting Book	Section includes lays, photographs, intensities and data on ballrooms, billiard rooms, dining rooms, bowling alleys and gymnasiums for clubs	Curtis Lighting
Rest for the Eyes	Proper dealing with problems in lighting	Curtis Lighting
CHURCH LIGHTING:		
Art and Utility in Church Lighting	Dealing with various problems from the utilitarian, esthetic and hygienic aspects in church lighting, both interior and exterior	Curtis Lighting
New Principles of Lighting for a Modern Church	Diagrams, photographs and data on the relighting of the First Church of Christ Scientist, Boston, Mass.	Curtis Lighting
Lighting Book	Section devoted to various phases of church lighting, giving diagrams	Curtis Lighting
Permafactor Magazine, March	Diagrams, photographs and data on the various phases of church lighting	Pittsburgh Reflector Co.
FACTORY LIGHTING:		
Lighting Book	Section showing photographs, data on numerous industrial lighting installations	Curtis Lighting
Industrial Lighting and Safety	Showing effect of inadequate intensity, glare and faulty distribution as causes of industrial accidents	Illuminating Engineering Society
Code of Lighting: Factories, Mills and other work places	Diagrams, photographs, data and charts on illumination required, avoidance of glare and exit and emergency lighting.	Superintendent of Documents, Government Printing Office
Design of Lighting Installations	Lays, dimensions, intensities, room index, co-efficiency of utilization and wiring guide for industrial installations	Westinghouse Lamp Co.
Permafactor Lighting; Floodlighting Number, September	Photographs and data on floodlighting industrials and construction work	Pittsburgh Reflector Co.
Light and Production		
Simplified Rating Scale for an Industrial Lighting System	Data on the effect of proper and improper light in production	Benjamin Electric Mfg. Co.
A Guide to Production Lighting in Industry	Photographs and tables showing quantity of light and watts per sq. ft. for various locations at various intensities	Benjamin Electric Mfg. Co.
Industrial Lighting	Gauge for effective lighting system, standard specifications and recommended ft. candle intensities	Benjamin Electric Mfg. Co.
The Way Out of the Twilight Zone	Tables for ft. candle illumination and R.L.M. reflector estimating and mounting	Overbush & Ayers Mfg. Co.
Plain Facts About Factory Lighting	Diagrams, data, photographs and charts for the design of intensive industrial lighting	Westinghouse Lamp Co.
Factory Lighting Designs	Charts, photographs and data on the effect of light on production, accidents and labor	National Lamp Works
Industrial Lighting	Lays, intensities and dimensions for installing industrial lighting	National Lamp Works
	A prospectus of a local market development program on industrial lighting	Society for Electrical Development
FLOODLIGHTING:		
Floodlighting Bulletin No. 54	Lays, photographs, diagrams, and tables of intensities and coverages	National Lamp Works
Floodlighting Bulletin No. 1	Lays, photographs, diagrams, equipment and tables of intensities and coverage	Pittsburgh Reflector Co.
Permafactor Lighting, Floodlighting Number, September	Photographs, diagrams and data on floodlighting installations	Pittsburgh Reflector Co.
Lighting Book		
Design of Lighting Installations	Section of photographs and data on the installation of floodlights	Curtis Lighting
Floodlighting	Section giving types in design and calculation data on floodlighting	Westinghouse Lamp Co.
	Photographs and data descriptive of application	Reflector & Illuminating Co.
MISCELLANEOUS:		
Lighting Book	A 316-page book profusely illustrated giving the history of the lighting art, engineered lighting, modern lighting practice in practically every type of construction and data on the planning of lighting systems	Curtis Lighting
Light in Architecture and Decoration	Includes photographs and descriptions of 66 installations	Illuminating Engineering Society
Selling Lighting at the Source	Paper on the effect of inadequate wiring in the sale of better lighting and a suggested solution	Illuminating Engineering Society

TITLE
General Lighting Plus
Design of Lighting Installations
Sales Promotion Manual

CONTENTS
Paper on the advantages of superposing lighting controlled localized lighting upon good general lighting
Diagrams, photographs and data on interior lighting calculations, lighting displays, floodlighting, outdoor lighting and bulletin lighting
Gives technique of selecting prospects, assigning inquiries, keying promotion with solicitation, etc.

ISSUED BY:
Illuminating Engineering Society
Westinghouse Lamp Co.
Society for Electrical Development

OFFICE BUILDING LIGHTING:

Lighting Book
Ease for the Eyes
Floodlighting
Permaflexor Lighting, Floodlighting Number, September
The Way Out of the Twilight Zone
Light in Architecture and Decoration

Layouts, and calculation of interior and exterior lighting of office buildings.
Layouts, photographs and data for the illumination of a large office building
Data on the floodlighting of office buildings
Contains data and intensities of floodlighting of office buildings
Diagrams, data, photographs and charts on the design of interior office lighting
Photographs and data on numerous office building interiors

Curtis Lighting
Curtis Lighting
Pittsburgh Reflector Co.
Pittsburgh Reflector Co.
Westinghouse Lamp Co.
Illuminating Engineering Society

RESIDENCE LIGHTING:

Rest for the Eyes
Lighting Book

Photographs and data on the application of indirect lighting
Section giving diagrams, photographs, layouts and data on residential lighting

Curtis Lighting
Curtis Lighting

SCHOOL LIGHTING:

Code of Lighting School Buildings, Bulletin No. 382
Lighting Book
Permaflexor Lighting, School and College Number, July

Diagrams, photographs, charts and data on proper school lighting
Section includes photographs and data on lighting educational buildings
Diagrams, photographs and design data for all phases of school and college lighting, both interior and exterior

Superintendent of Documents, Government Printing Office
Curtis Lighting
Pittsburgh Reflector Co.

SERVICE STATION LIGHTING:

Permaflexor Lighting, May
Lighting Book
Service Station Lighting

Layouts, photographs and data on interior and exterior service station lighting
Diagrams, photographs and data on interior and exterior service station lighting
Data on exterior lighting of service stations

Pittsburgh Reflector Co.
Curtis Lighting
Crouse-Hinds Co.

SHOW ROOM LIGHTING:

Lighting in Architecture and Decoration
Design of Lighting Installations
Lighting Book
Lighting Sales Space
Permaflexor Lighting, May
Commercial Lighting

Photographs and data on numerous installations
Data on the design of display lighting
Section showing photographs and data on showroom lighting
Data on lighting appliance salesrooms
Photographs, diagrams and data on lighting automotive showrooms
A prospectus of a local market development program on store lighting

Illuminating Engineering Society
Westinghouse Lamp Co.
Curtis Lighting
Curtis Lighting
Pittsburgh Reflector Co.
Society for Electrical Development

SHOW WINDOW LIGHTING:

Permaflexor Lighting, May
Lighting Book
Design of Lighting Installations
Light in Architecture and Decoration

Photographs and data on lighting automobile show windows
Photographs and data on various types of show window lighting
Data on designing show window lighting
Contains data on exclusive show window installations

Pittsburgh Reflector Co.
Curtis Lighting
Westinghouse Lamp Co.
Illuminating Engineering Society

SPORT LIGHTING:

Night Lighting for Outdoor Sports
Lighting Race Tracks
Permaflexor Lighting, Floodlighting Number, September
Lighting Race Tracks
Lighting of Miniature Golf Courses
Golf Driving Range and Miniature Golf Course Lighting
Baseball Field Lighting
Lighting Golf Driving Ranges
Lighting Football and Athletic Fields
Lighting Book
Football Field Lighting
Tennis Court Lighting
Indoor Golf Course Lighting
Outdoor Golf Course Lighting

Diagrams, photographs and data on lighting tennis courts, swimming pools, bowling greens and hockey rinks
Diagrams and data on the lighting of race tracks
Photographs and data on lighting for football, baseball, swimming pools, race tracks, golf, trap-shooting, tennis, etc.
Data and layouts on lighting race tracks
Complete data, diagrams and photographs of various types of lighting numerous types of courses
Photographs, layouts and lighting data
Photographs, layouts and lighting data
Diagrams and data on lighting ranges
Diagrams and data on lighting of large and small fields
Photographs and data on the lighting of athletic clubs, field houses, etc.
Data on lighting large and small football fields
Data on lighting tennis courts
Photographs and installation data on indoor golf lighting
Photographs and installation data on outdoor golf lighting

Ivanhoe Division of the Miller Co.
Ivanhoe Division, Miller Co.
Pittsburgh Reflector Co.
Benjamin Electric Mfg. Co.
Benjamin Electric Mfg. Co.
Crouse-Hinds Co.
Crouse-Hinds Co.
Benjamin Electric Mfg. Co.
Benjamin Electric Mfg. Co.
Curtis Lighting
Crouse-Hinds Co.
Crouse-Hinds Co.
Jackson Electric Co.
Jackson Electric Co.

STREET LIGHTING:

Design of Lighting Installations
Planning Street Lighting

Data on Modern Street Lighting Practice
Photographs, tables and data

Westinghouse Lamp Co.
General Electric Co.

THEATRE LIGHTING:

Theatre Lighting
Light Plays Its Part
Lighting Book

Suggested specifications and layouts and data on standard practice in stage lighting
Photographs, diagrams and data on lighting the small theatre
Photograph, diagrams and data on the lighting of auditoriums, lobbies and stages

Belson Manufacturing Co.
Curtis Lighting
Curtis Lighting

The addresses of the companies listed above are as follows:
Belson Manufacturing Co., 804 Sibley Street, Chicago, Ill.
Benjamin Electric Manufacturing Co., Des Plaines, Ill.
Crouse-Hinds Co., Syracuse, N. Y.
Curtis Lighting, Inc., 1119 W. Jackson Blvd., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Illuminating Engineering Society, 29 W. 39th St., New York, N. Y.
Ivanhoe Division of The Miller Co., Meriden, Conn.
Jackson Electric Co., 910 W. Van Buren St., Chicago, Ill.
National Lamp Works, Nela Park, Cleveland, Ohio
Overbaugh & Ayers, 413 S. Clinton St., Chicago, Ill.
Pittsburgh Reflector Co., 304 Ross Street, Pittsburgh, Pa.
Reflector & Illuminating Co., 1417 West Jackson Blvd., Chicago, Ill.
Society for Electrical Development, Inc., 420 Lexington Ave., New York, N. Y.
Superintendent of Documents, Government Printing Office, Washington, D. C.
Westinghouse Lamp Co., 150 Broadway, New York, N. Y.



Lighting for



A football field lighting installation of the type suitable for high school or small colleges with very limited attendance.

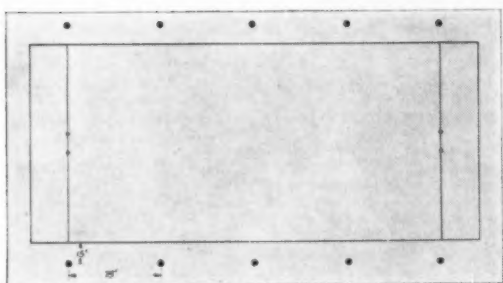


Diagram of a field with a very limited attendance showing the location of the 10 poles, on each of which are 4-1000 watt lamps in medium angle flood lighting projectors mounted on double cross arms 40 to 50 ft. above the ground.

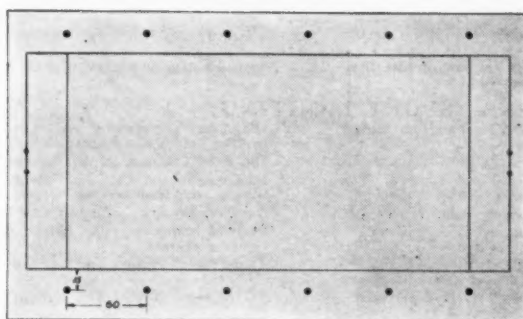


Diagram of the high school or small college field showing the location of the 12 poles on each of which are 4-1000 watt lamps in oxidized aluminum, concentrating reflectors mounted on double cross arms 40 to 50 feet above the ground.



A type of installation suitable for the average high school or small college field.

NIGHT FOOTBALL

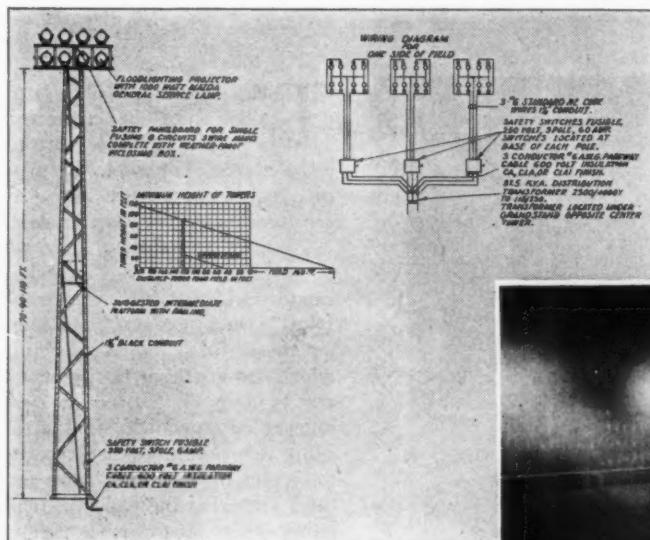
By DEAN M. WARREN

Engineering Department
Edison Lamp Works and National Lamp Works
Nela Park, Cleveland

GENERAL RECOMMENDATIONS

UNIT	High Schools and Small Colleges	Medium Size College Stadiums
*LAMPSIZE	Medium angle floodlight projector or oxidized aluminum concentrating reflector	Medium angle floodlight projector
MOUNTING HEIGHT	1000-watt	1000-1500-watt
SPACING	40-50 feet	Min. 70 ft. Recommended 90 ft.
UNIT MOUNTING	Usually 75 feet	150 feet
NO. POLES OR TOWERS	Attach to double cross-arms	Steel or wooden towers with platform
UNITS PER POLE	10-5 on each side	6-3 on each side
FOOT CANDLES	4	8
	4-8	8-12

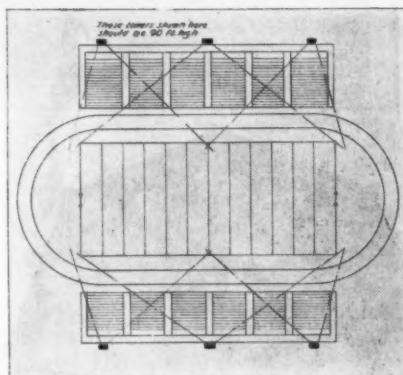
*It will be found economical to burn lamps 10% over voltage. This procedure represents a practical and economical balance between lamp's life and lumen output, approximately 38% increase in light and 70% decrease in lamp life. Wiring should be of such capacity that voltage drop will be at minimum.



A floodlighting installation in a medium sized college stadium using steel towers in rear of grandstand. The field is illuminated to an average intensity of 9 ft. candles.

Electrical Contracting, October, 1930

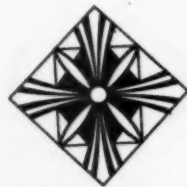
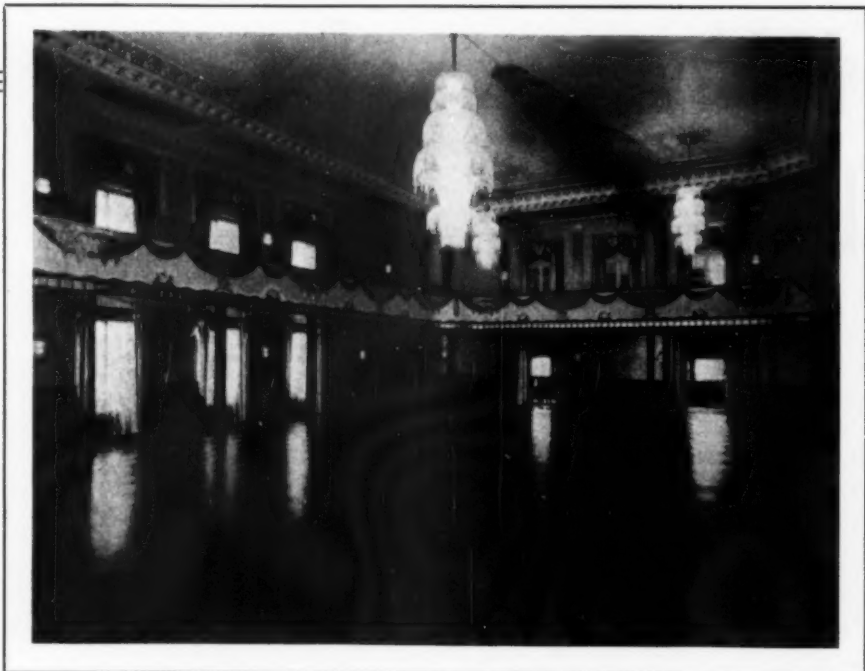
High school and college gridirons are lighting opportunities to the electrical contractor who is in a position to make installations giving the degree of adequacy and uniformity in illumination essential to precision playing



Plan of stadium showing location of the 6 steel towers, each carrying 8 floodlighting projectors.

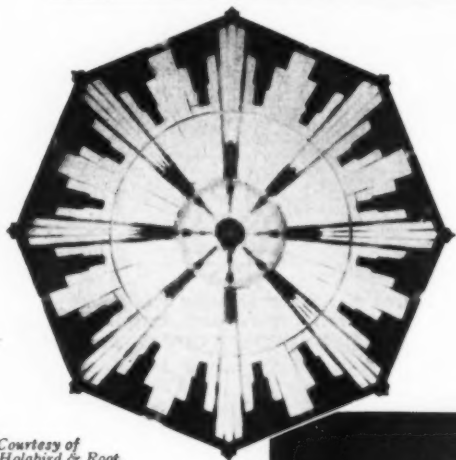
Detail of tower construction, with chart showing the relation of tower height to distance from field and a wiring diagram for one side of the field.





Crystal fixtures are ever appropriate for the ball-room. Chicago Woman's Athletic Club, Chicago. This illustration shows how crystals may be used and still be moderne.

Courtesy of Philip Maher, Architect



Courtesy of Holabird & Root, Architects

Great central fixture in the new Chicago Board of Trade. This fixture, 38 ft. in diameter and weighing over 8 ton is interesting for its size.

Flat slabs of etched glass are being extensively used. Because of their simplicity, they must be designed with utmost taste and discretion. The illustration is Yardley & Co., Ltd., New York City.



Courtesy of Kantack & Co.

BEAUTY—

By RALPH W. HAMMETT

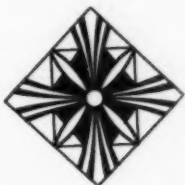
Member, American Institute of Architects

THE question that is usually asked in connection with any purchase whether it be clothes, automobile, furniture or lighting fixtures is, is this selection up to date, is it in style?

We have gone through a decade of period design. We have had candle fixtures which were rank fakes (we'll not say they were not beautiful), indirect lighting which did anything but light, direct lighting which tired the eyes, bracket lamps which blinded the subjected victim, fixtures spaced too close or too far apart, fixtures featuring the exposed luminaire, others concealing it. We've had Louis XV, Spanish, Gothic, Italian, and last but not most illusive of all, we now have the moderne.

We shudder. So much of this moderne is badly proportioned

Electrical Contracting, October, 1930



A silhouette effect is produced by reflected light in a reception room of the Blackstone Shop, Chicago. This almost resolves itself into an example of trick-lighting but it is appropriate in this particular case and produces a strong, beautiful effect.

Courtesy of Philip Maher, Architect



The Trend of Lighting



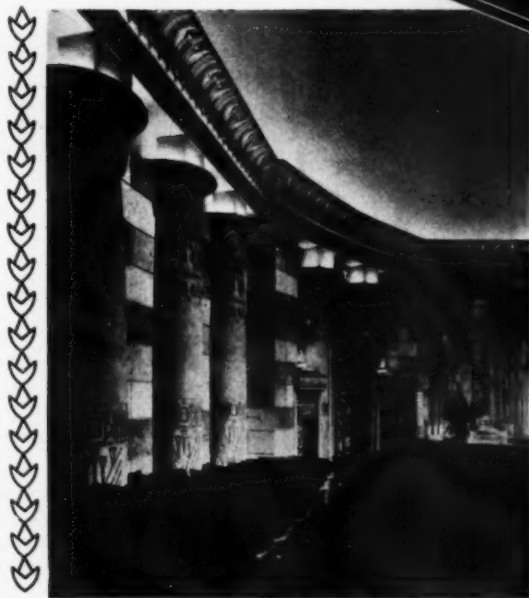
Courtesy of Frink Corporation

and impractical. Yet it is here to stay. We have done our experimenting; we must move on.

Lighting must be more than just light. Distribution must be even. Lights must be shaded from the eyes, and diffused to eliminate most of the sharp shadows. Aesthetics will not tolerate the one, two, three methods used in factory installations, however efficient they may be. Lighting elements must fit into the architectural scheme of things. In some buildings, fixtures are featured, in others they appear as part of the structure.

Note the ball room fixtures of the Chicago Woman's Athletic Club. They are appendages but have a place in the decorative scheme. They are crystal, elegant and bespeak the ball room as

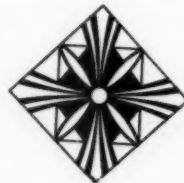
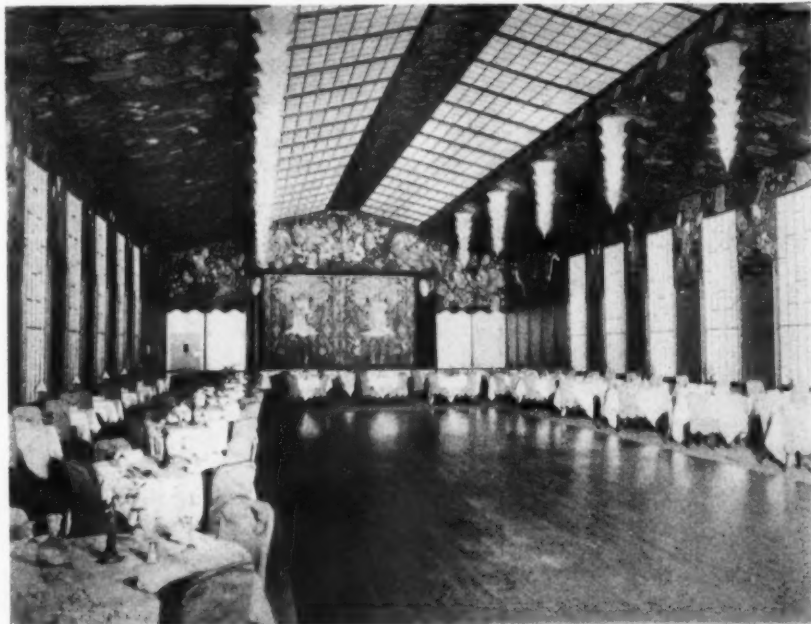
Electrical Contracting, October, 1930



Courtesy of Erickson Electric Co.

Kaufmann's Department Store, Pittsburgh, Pa. Lighting is accomplished by continuous reflectors covered with carefully joined frosted glass. The effect probably owes much to preliminary experimentation and careful designing on the part of the architect and illuminating engineer.

Concealed illumination used for the auditorium in the Egyptian Theatre, Boston, shows another example of indirect lighting where full emphasis is given to the architecture.

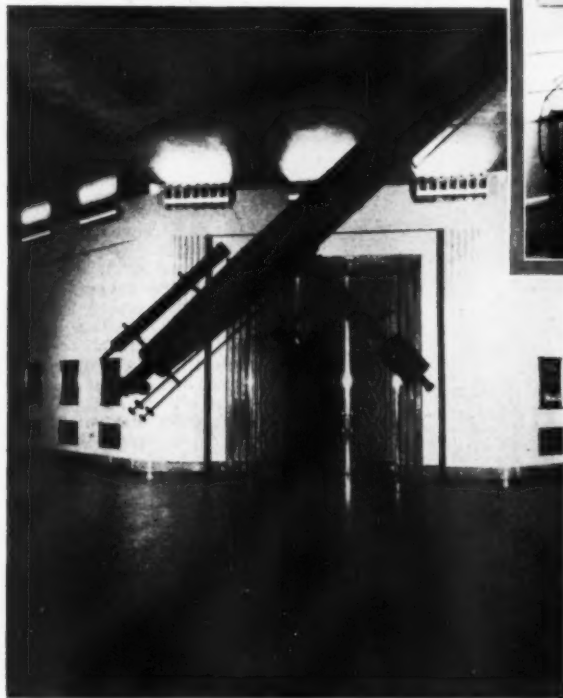


Lighting from concealed sources on a roof-garden. Mirrored reflectors are concealed behind silk panels along the side walls and ceiling. The pendant fixtures are also of silk. Hotel Gibson, Cincinnati.

*Courtesy of
Curtis Lighting*

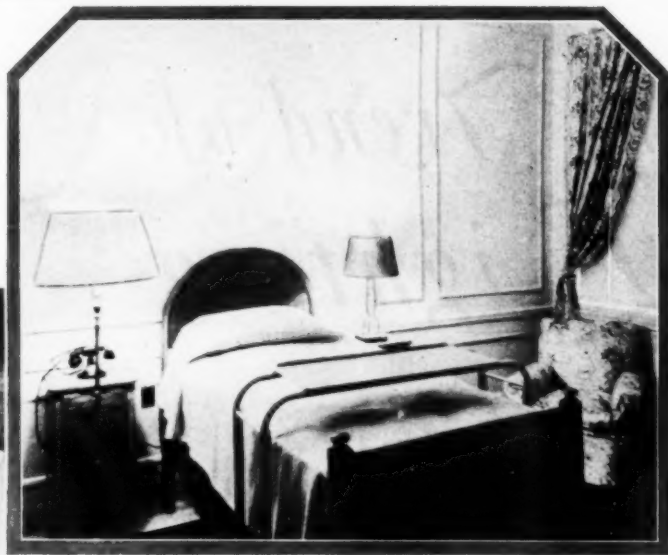
Private room lighted from an indirect adapter concealed in a floor lamp. Passavant Hospital, Chicago. It may be noted this floor lamp may be effectively used in private home living rooms or in the finely furnished office.

Odd light fixtures at the cove are reflected by a ceiling of gold-leaf in the interior of the Planetarium, Chicago. Note that this is a very special building with a very special lighting effect.



Courtesy of Ernest Greensfeld, Jr., Architect.

20



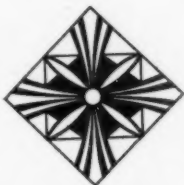
Courtesy of Curtis Lighting

crystals ever do. Note for something different, the flat slabs of etched glass in Yardleys on Fifth Avenue. Note the architectural lighting of continuous moulding effect in Kaufmann's Department Store in Pittsburgh.

The foyer of the new Planetarium, Chicago, is interesting. Odd lighting fixtures at the cove are reflected by a ceiling of gold leaf. In the roof garden of the Hotel Gibson, Cincinnati, the window-like wall panels on the side are of transparent silk as are also the skylight and the pendant-like ceiling fixtures. Bizarre though the scheme may be, it is a night club and is effectively lighted.

Indirect lighting is being increasingly used. The Church of the Heavenly Rest, New York City, is beautiful in its simplicity. In a private room in Passavant Hospital, Chicago, an indirect adapter is concealed in

Electrical Contracting, October, 1930



In the E. T. Slattery Co., Wellesley, Mass., store, general lighting is accomplished by means of reflectors concealed within the tops of wall cases. This part of the decorative scheme adds much. It creates a rim of white light around the room and while in theory the method is that of indirect lighting, the decorative element has been studied.

*Courtesy of
Frink Corporation*



Note the modern floor lamp of bright metal in the bathing pavilion of Elias Mayer Estate, Lake Forest, Ill., a good example of the ultra-moderne in home lighting.

Special lighting effect produced from reflectors concealed above parapets and by special reflector units recessed in the floor at the base of the columns. The effect which is completely diffused as far as light is concerned throws full emphasis on the architecture. Church of the Heavenly Rest, New York City.



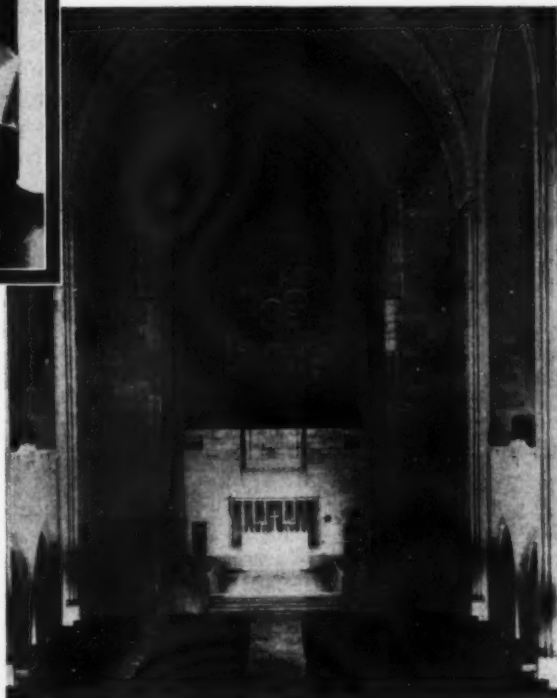
Courtesy of Philip Maher, Architect

the shade of a floor lamp. In this case the floor lamp is a hang-over as was the electric candle of the past decade. The adapter will undoubtedly adjust itself to more direct forms as is to be seen in the modern floor lamp in the Bathing Pavilion on the Elias Mayer Estate, Lake Forest, Ill. For the present in most homes the piano lamp form will continue as a household furnishing.

We seem not to be able to divorce old forms too quickly. We have been moving rapidly this past decade. It has been a transitional period. Yet in our homes particularly we love the old forms we have been used to and hesitate to give them up even when obsolete.

The tendency is more light, more diffusion, less light consciousness and less treatment of light fixtures as appendages to be purchased after a building is built.

Electrical Contracting, October, 1930



Courtesy of Curtis Lighting

Electrical Contracting

With Which Is Incorporated The Electragist

S. B. WILLIAMS
Editor

A Trade Practice Conference

THE Association of Electragists has been authorized to apply to the Federal Trade Commission for a trade practice conference to discuss the rules proposed at the Milwaukee convention and set forth last month in ELECTRICAL CONTRACTING.

For the most part the proposed rules were based upon rules of other industries that have already been approved. There is little likelihood, therefore, that many of the rules will be altered except in some minor detail.

The industry must remember, however, that the rules once approved are not automatic. In other words, the major portion of the policing of the rules must come from the industry.

For that reason it is all the more necessary that the local associations be strong. If the local body is anemic the rules will not put strength into it. Only as strong locals, officered by men of courage, decide to make the rules effective will they be worth the paper they are written on.

A Specialist's Work

WE have repeatedly been asked the question, "Does a contractor who becomes a specialist devote himself to that work to the exclusion of all other wiring?"

In some cases, particularly in the very large cities where there is enough opportunity for a contractor to specialize on some one class of work to the exclusion of all other. In most cities, however, this cannot be done.

Generally speaking, a contractor who specializes will do a general electrical con-

tracting business, but be especially well posted on some one or two phases of the work. In other words, he will be recognized as the best man in town or his locality for that class of work.

The trend towards specialization by contractors is very marked. Every day we get more evidence of it. There isn't a town visited by our field force that hasn't one or more specialists.

Contractors Wise Specialize!

Light Sells Lighting

A LIGHTING installation of sufficient adequacy to be conspicuous makes those, who observe it, light conscious, and they thus become prospects for the lighting specialist.

That these prospects can be made good customers has been made evident by the Electrical League of the Tri-Cities, Rock Island, Ill.

A baseball park was lighted for night playing resulting in a large attendance. One merchant who had not been approachable on the subject of lighting adequacy came to the league office and asked if his shop could not be made as bright as the baseball field.

In reality what this merchant wanted was to have his shop stand out in comparison to its surroundings as well as the baseball field did in comparison to the surrounding darkness. The baseball lighting installation had made that particular merchant light conscious and, when properly informed, a good lighting customer.

It behooves the lighting specialist to consider the principle lighting installations in his community and the prospects those installations may be providing.

While There Is Life

A NATIONAL credit control policy acceptable to the whole jobbing industry is still being negotiated. A committee from the Association of Electragists met with the executive committee of the National Electrical Wholesalers' Association at Niagara Falls, Canada, in September for an informal discussion on distribution and credit control was one of the problems to receive consideration.

There are two groups of jobbers to consider—those doing an inter-state business and those operating locally. The latter want credit control and the local managers of the inter-state houses want credit control; but the lawyers at headquarters say "No." At any event, the inter-state houses, by their methods, have been able to halt the advance of credit control.

And now there seems to be another ray of hope as the result of the 1930 Niagara Falls conference. Well, maybe. At least, while there's life, there's hope.

The New Association

LAST spring a group of the larger electrical contractors met in Washington for the purpose of starting a national organization, primarily to improve and stabilize conditions attendant upon the employment of union wiremen. The new organization, known as the Electrical Guild of North America, is now functioning. Offices have been opened in Washington, a research director appointed and quite recently a prospectus setting forth the objects, the constitution and the by-laws has been printed for distribution, as announced in the news columns of this issue.

Its major purpose will be to prevent losses to the public and the industry from strikes and lockouts. That in itself is important for labor disturbances are one of the most serious economic wastes that American industry has.

The program of the Guild, however, is much broader than the prevention of losses from labor difficulties. It proposes to enlarge the scope of the electrical construction field, particularly in utility and industrial plants. A research bureau has been established for the purpose of collecting and dis-

seminating information relative to new materials, processes, unfair practices, credits and other scientific, commercial, industrial and economic data.

The contracting industry has needed some agency to interpret aggressively the economic facts of the business, both to the rest of the electrical industry and to the contractors themselves. The electrical contracting industry has, for years, had an inferiority complex which the rest of the electrical industry has been careful to nourish. As a matter of fact, the electrical contractors have been so beset with competition that they have been forced to do their work in a manner probably more efficient and more economical than any other branch of the electrical industry. Certainly, as an employer of labor, the electrical contractors are far superior in their management to the utilities. In the industrial plants it will be easy to prove, once the Guild sets to work, that the cost of work done by factory electricians is considerably greater than the cost of similar work done on a regular schedule by contractors.

It has frequently been hinted that public utilities might find it advisable to enter the wiring business in order to secure wiring costs at more reasonable levels. Some agency with the funds and the time to devote to this study should be able to determine that no utility is so set up that it can do any wiring work at a reasonable cost.

The Guild does not have a large membership as national associations go, but with the dues it has proposed, it will have a treasury sufficiently well financed to make it possible for it to undertake economic studies and then give them the necessary publicity. We predict that if the Guild will undertake these studies it will not be long before the industry has a different picture of the electrical contracting business as a whole.

Incidentally, also the Guild will be in a position to give combat to any insidious influences which might care to disrupt the local electrical construction market in a fashion such as occurred this year in a number of cities.

The Electrical Guild of North America is in a position to do things which the Association of Electragists never could do, either because of policy or insufficient funds. There is, therefore, no conflict and the Association of Electragists will continue to function as the national association for all electrical contractors.

Code Chats

A Monthly Discussion of Wiring Practice and Questions of Interpretation, Presented with a View Toward Encouraging a Better Understanding of the National Electrical Code - - -

Conducted by **F. N. M. SQUIRES**

Assistant Chief Inspector, N. Y. Board of Fire Underwriters

Outside Lighting

Does 807h apply to outdoor wiring?

Yes, Section 807 applies to lighting branch circuits and to appliance branch circuits and their combinations, regardless of whether they are outdoors or indoors. In fact, the larger capacity lamps requiring mogul sockets are probably used more often out-of-doors than otherwise.

Can 10-1000 Watt lamps be connected on one circuit, for the wiring of a Tom Thumb golf course.

No, this would violate both 807h and j. A 1000 Watt lamp at 110 volts requires 9.9 Amps. and 10 of them would, therefore, draw 99 Amps. A 100 Amp. fuse would probably not be able to take care of the

inrush current on the cold filaments and anyway according to 807h a 40 Amp. fuse is the largest which could be used on this circuit. Also 807j limits the number of sockets to 8. The matter of the designation of use for a golf course or for any other purpose does not alter the rule.

In outdoor underground conduit runs, how must the conduit enter the iron pole or fixture?

There are really two parts to this problem. One the iron pole the other the fixture, and the iron pole, which of course is hollow, is not to be considered part of the fixture because, not being an approved electrical conduit, is not a proper raceway for unprotected (not uninsulated but rubber covered wires). These poles are very often cast and therefore quite rough on inside. The conduit, then, should run up through the pole to the fixture and the conduit run should terminate in some sort of an outlet box into which the fixture can also be secured. The conduit may extend right to the socket and the socket attached directly to the conduit. The fixture itself begins (or ends) at the socket and runs back to the outlet box at which the conduit ends. In this class of work, as contrasted with interior house wiring and fixture jobs, there is quite generally no real distinction as to the exact line of demarcation between the end of conduit and the beginning of the fixture. There are, of course, jobs where open wires are used between the outlet box at the end of the conduit and the fixture. Or it may be desired to have a movable fixture and therefore to resort to the use of flexible conduit or cable. In any case of doubt the local inspection department having jurisdiction should be consulted.

Circuits for Mogul Sockets

A correspondent inquires if it is permissible under the Code to install four mogul sockets for a 1000 watt lamp each on a 3-wire circuit using 3 No. 10 wires, the neutral being solid and the outside wires protected by 20 ampere fuses and controlled by a safety switch.

Our reply is that the above is in accordance with the Code requirement, providing the circuit is a 3-wire 110-220 volt single phase or D.C. circuit, having a grounded neutral.

This is governed by rule 807-h and j. Paragraph j puts the limit of 8 mogul sockets on a branch circuit and while the rule specifically mentions 2-wire and 3-wire circuits, it



ORIGINATED DEALER MERCHANDISING PLAN:—H. H. (Kelly) Courtright, president and manager of the Valley Electrical Supply Co., Fresno, Calif., is the originator of the "Through the Dealer Plan" of electrical merchandising.



HEADS SOUTHERN CALIFORNIA ESTIMATORS:—P. R. (Mac) Machtolf of the Machtolf-Doll Electric Co., Glendale, Calif. He is chairman of the Estimators Section, California Electricists, Southern Chapter.

Electrical Contracting, October, 1930



The Real Silk Hosiery Mills, Indianapolis, Ind., U. S. A.

***The Largest Manufacturers of Silk Hosiery in the World
Save Money and Abolish Grief With***

In the Real Silk Hosiery Mills, where every minute counts, where the hum of busy knitters depends on the efficiency of electrical protection, you'll find TRICO Renewable Fuses functioning faithfully. Because of constant trouble with other makes of fuses, a test with TRICO gave proof of their superior performance and led to their adoption.

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They're "Powder-Packed"

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No Premature Blowings
No Unnecessary Shutdowns
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No Charred Casings
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To secure these money-saving factors the TRICO renewal element is designed with the thought of performance in mind, rather than interchangeability of links; and the practical buyer prefers performance.

And they cost
no more
than other makes
of renewable fuses.



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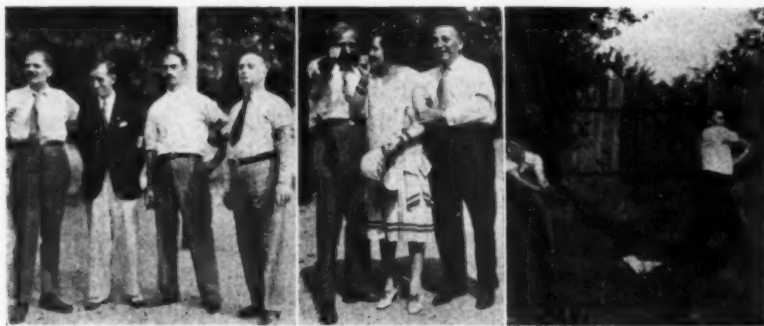


"Locks Like
a Vise"

Makes pressure contact between fuse and clips. Reduces resistance and preserves clips and fuses. Made in sizes to fit all clips.

TRICO FUSE MFG. CO., 1007 McKinley Ave., Milwaukee, Wis.

RENEWABLE FUSES—PLUG FUSES—NON-RENEWABLE FUSES—FUSE PULLERS



A MANHATTAN CONTRACTOR'S ANNUAL OUTING:—Left, association officials: Hans Brackmuller, president of the Manhattan Licensed Contractors' Association; Sam Marino, chairman of the entertainment committee; Charles Desoquitz, vice-president and Morris Lappman, treasurer. Right, "Home Run Bill" Klein knocks one over the fence. Jack Pfeferstein of the Nieman Electric Co., is behind the bat. Middle, president Brackmuller pointing out the celebrities at the outing to Mrs. A. Shemel and Joe Edelmuth, president of the Bronx Electrical Contractors' Association.

is conceded by practically all inspection authorities that it also applies to a branch circuit of any multi-wire system, such as the 3-wire D.C. or single phase system or the 4-wire three phase system having the common neutral.

Paragraph h of 807 limits the fuse on a circuit supplying mogul sockets to 40 amperes. But in limiting the fuse to not exceeding 40 amperes it does not permit, nor even imply, that a No. 14, or a No. 12, or a No. 10 circuit wire may be fused to 40 amperes.

If a No. 14 wire is used it must be protected by not over 15 ampere fuses. Likewise, No. 12 wire must be protected by not over 20 ampere fuses and No. 10 by not over 25 ampere fuses. A tap, however, from the circuit wire to the socket, providing it is not over 18 in. long, and fixture stem wire may be not smaller than No. 12 if the circuit is protected by 40 ampere fuses (or smaller) regardless of whether the circuit wires are No. 10, No. 8, No. 6, or larger.

It should be noted that rule 807 no where restricts the wattage of a circuit to 1500 except where more than 12 outlets per circuit are used in an area of not over 1200 square feet. There is, therefore, no restriction to not exceed 1500 watts where mogul sockets are used.

The accompanying tables show the maximum number of lamps of various sizes requiring mogul sockets which may be installed on a single branch circuit (or any circuit of a multi-wire lighting system) when using the size wire specified in the left hand column.

Lamp Watts		300	500	750	1000	1500
Amps. at 110 V		2.7	4.5	6.8	9.9	13.6
Size Wire	Fuse Limit Amps.	No. of lamps permitted on a branch circuit.				
14	15	5	3	2	1	1
12	20	7	4	3	2	1(e)
10	25	8	5	3-b	3	1(e)
8	35	8(a)	7	5	4	2
6	40	8(a)	8	5(c)	4(d)	2(f)

Lamp Watts		300	500	750	1000	1500
Amps. at 120 V		2.5	4.2	6.2	8.3	12.5
Size Wire	Fuse Limit Amps.	No. of lamps permitted on a branch circuit.				
14	15	6	3	2	1	1
12	20	8	4	3	2	1(h)
10	25	8	5	4	3	2
8	35	8	8	5	4	2(i)
6	40	8	8	6	4(g)	3

- (a) More than 8 mogul sockets not permitted.
- (b) Only 3 can be used on No. 10 wire and No. 12 wire will be permitted. For 4-750 watt lamps No. 8 must be used.
- (c) More than 5-750 watt lamps not permitted as this would require a fuse of over 40 amperes.
- (d) More than 4-1000 watt lamps not permitted as over 40 ampere fuse would be required.
- (e) No. 12 and No. 10 wire not required as No. 14 wire will be sufficient for 1-1500 watt lamp and No. 8 is required for 2.
- (f) More than 2-1500 watt lamps not permitted as fuse over 40 amperes would be required.
- (g) More than 4 not permitted as this would require over 40 ampere fuse.
- (h)-(i) These wire sizes not needed as smaller size wire is sufficient.

No consideration given to voltage drop in the above. Larger size wire may be used if desired, providing no wire is fused at over 40 amperes and no wire fused at more than permitted in Table I of 612-a.

Switches for More Than Four Meters

INTERPRETATION 39

QUESTION: Is a separate switch and fuse required for each meter when more than four meters are involved and meters are grouped at point of service entrance, or will main service entrance switch be sufficient?

FINDING: When, as specified in the final sentence of sub-paragraph 4 of paragraph c of Section 405, an installation involves more than four meters "the entire current shall be taken through one main entrance switch" and the use of a separate switch and cut-out to control each separately metered circuit or group of circuits is not mandatory, although is recommended in the fine print note of paragraph d of this section.

Secondary Circuit Systems

INTERPRETATION 40

QUESTION: Do the following secondary circuits constitute different systems within the intent of paragraph n of Section 503: power supplies from three transformers star connected to a 4000-volt, 4-wire primary with a grounded neutral; secondaries connected in delta to give 3-phase 220-volt lighting load balanced between three single-phase transformers 2300 to 220-110 volts, primary of each such transformer connected between one of the three outside legs and the grounded neutral of the 3-phase, 4-wire primary supply serving the power transformers, thus providing that all transformers, both light and power, are supplied from the same primary, and that the secondary circuits, both light and power, are at the same voltage, the secondaries for the lighting circuits having the neutral point at ground potential?

FINDING: No.

Structural Damage

INTERPRETATION 41

QUESTION: With reference to paragraph b of Section 703 of the 1930 edition of the National Electrical Code, does cutting of the wood lathing of partition, wall, or ceiling finish constitute structural damage?

FINDING: No. The special committee believes that the paragraph applies to installations of flush mounted boxes and that in many cases where the usual form of fixture canopy will be found a surface mounted shallow type box is acceptable.

Autotransformers on Ungrounded Secondaries

INTERPRETATION 48

QUESTION:—May auto transformers be used on ungrounded secondaries of utility distribution systems which supply ungrounded power circuits in consumer premises?

FINDING:—Yes, if the voltages concerned are not reduced to a value where grounding is called for, as in paragraph (c) of Section 902.

NOTE:—We are not concerned with paragraph (e) of Section 500 in this question since a power circuit only is involved.

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A. E. I.

News and Service Information

*Material for this department is supplied by the headquarters staff of the Association of Electragists, International,
420 Lexington Avenue, New York, N. Y.*

Joint Conference with N.E.W.A.

A special committee from the A.E.I., composed of President L. E. Mayer, Ernest D. Brown, executive committeeman from Detroit, and General Manager Laurence W. Davis, met with a joint committee of the National Electrical Wholesalers Association at Niagara Falls, Ontario, on September 12, 1930, for discussion of various problems of mutual interest to electragists and wholesalers.

The recommended policy for electrical wholesale distribution adopted by the Electragist convention at Milwaukee was thoroughly discussed and approved in principle by the wholesalers' committee, and it was agreed that this policy be distributed to all electrical supply jobbers.

The evil of "courtesy discounts" was pointed out by several wholesalers, who stated that it is very difficult to escape this situation without the general adoption of a definite and rigid policy of distribution. The recommended policy presented by the A.E.I. covers "courtesy discounts" by limiting sales at wholesale prices to those classifications other than resale outlets "purchasing for plant or manufacturing purposes only."

It is recommended that all A.E.I. Chapters bring this recommended policy for electrical wholesale distribution to the attention of wholesalers in their territory. The terms of this policy were printed on page 10 in the September, 1930, issue of ELECTRICAL CONTRACTING.

The joint committee gave consideration to the approval of a credit plan

which can be generally adopted by all electrical wholesalers, and it was agreed that steps will be taken promptly to obtain the necessary approval of attorneys and executives to a plan which can be given to all cities desiring to make it effective.

The Joint Conference was presided over by Bonnell W. Clark, national chairman of the National Electrical Wholesalers Association.

New Chapters

Since publication of the A.E.I. Chapter Directory in the August issue, Electragist Chapters have been chartered in Waterloo, Iowa, and Knoxville, Tenn., and officers have been elected as follows:

Waterloo Chapter:—H. R. Plowman, president, 623 Lafayette St.; C. F. Nagle, secretary, 207 West Park Ave.

Knoxville Chapter:—George R. Mend, president, The Warner Service Co., Clinch and Central Aves.; C. R. Wright, secretary, 303 West Church Ave.

* * *

Trade Practice Conference

The special committee of the A.E.I. which is handling the procedure for a Trade Practice Conference of the electrical contracting industry, under the auspices of the Federal Trade Commission, is making a nation-wide poll of all electragist chapters and other local organizations of electrical contractors, as well as all individual members of the A.E.I. who are not enrolled in chapters, to obtain the general assent of the industry to the proposed Trade Practice Rules which were approved by the Milwaukee convention, and the endorsement of the committee's request to the Federal Trade Commission to call such a conference.

The returns already received from this poll indicate that the Trade Practice Conference will be endorsed by a very large majority of the electrical contractors whose work is figured on plans and specifications and through contractual relations.

A. E. I. Committees Appointed

President L. E. Mayer announces the following appointments of chairmen for A.E.I. standing committees for the ensuing year:

Committees—	Chairmen—
Trade Policy .....	.....J. A. Fowler, Memphis
Membership .....	.....F. T. Langford, Minneapolis
Wiring Methods .....	.....J. H. Schumacher, Winnipeg
Cost Data .....	.....J. H. Schumacher, Winnipeg
Central Station Relations .....	.....E. N. Peak, Marshalltown
National Motor Section .....	.....Louis Kalischer, Brooklyn
Architects and Engineers .....	.....E. D. Brown, Detroit
Standardization .....	.....C. L. Chamblin, San Francisco
Legislation .....	.....W. W. Ingalls, Miami
Liability Insurance .....	.....J. A. Fowler, Memphis
Credit and Accounting .....	.....R. R. Reid, Salt Lake City
U. S. Chamber of Commerce .....	.....L. K. Comstock, New York
National Electrical Code .....	.....E. N. Peak, Marshalltown
International Relations .....	.....R. A. L. Gray, Toronto
Convention .....	.....J. A. Fowler, Memphis
Publication .....	.....L. E. Mayer, Chicago

PERMANENCE *plus* EASE of INSTALLATION

The Terminal Tower Building, Cleveland—another masterpiece whose electrical wiring is permanently protected with Youngstown Buckeye Conduit—also piped with Youngstown steel pipe.

YOUNGSTOWN Buckeye Conduit has two outstanding features which recommend it to electrical contractors—first, its permanence; second, the ease with which it is installed.

Every length of Youngstown Buckeye Conduit is absolutely straight and round; bends easily without breaking or opening at the welds; has deep, clean-cut



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Cleveland, Ohio

Plumbing Contractors:
A. R. BRUGGEMAN CO.
Cleveland, Ohio

Electrical Contractor:
**THE HATFIELD
ELECTRIC CO.**
Indianapolis, Ind.

threads which are protected from corrosion and has a durable enamel or electro-galvanized coating. These features eliminate lost motion on the job and make for faster, easier and better finished conduit installations.

Try Youngstown Buckeye on your next job and convince yourself of its greater ease of installation.

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CLEVELAND—Term'l Tower Bldg.
DALLAS—Magnolia Bldg.
DENVER—Continental Oil Bldg.
DETROIT—Fisher Bldg.
MINNEAPOLIS—Andrus Bldg.

KANSAS CITY, MO.—Commerce Bldg.
MEMPHIS—P. O. Box 462
NEW ORLEANS—Hibernia Bldg.
LONDON REPRESENTATIVE—The Youngstown Steel Products Co., Dashwood House, Old Broad St., London, E. C. Eng.

NEW YORK—30 Church St.
PITTSBURGH—Oliver Bldg.
PHILADELPHIA—Franklin Trust Bldg.
SAN FRANCISCO—35 New Montgomery St.
SEATTLE—Central Bldg.
ST. LOUIS—525 Louderman Building
YOUNGSTOWN—Stambaugh Bldg.

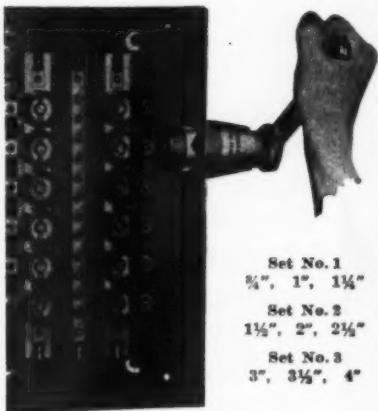
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GALVANIZED SHEETS PROTECT ∴ SAVE WITH STEEL

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Outstanding Features

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GENTLEMEN: Send me at once a set of No. [1] [2] [3] (check) Nischan Knockout Punches. After 10 days' trial, if I am not satisfied I will return them. This obligates me in no way.

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MODERNIZATION MEETING OF BROOKLYN, N. Y., CONTRACTORS:
—Meetings are held bi-monthly and educational talks are given by experts on various phases of the electrical business. This activity is part of the Electrical Modernization of Industry plan sponsored by the New York Modernization Committee.

At the conclusion of this poll, Mr. L. K. Comstock, chairman of the A.E.I. Committee, will present to the Federal Trade Commission the request for a call for a Trade Practice Conference, backing up this request with the signatures representing thousands of electrical contractors, whose annual volume of business runs into hundreds of millions of dollars.

NEW MEMBERS

The following applicants have been accepted into the A. E. I. since the publication of the list in the September issue:

- | | |
|-----------------------------------|--|
| CALIFORNIA | Kansas City: |
| Los Angeles: | Burkholder Electric Co. |
| Atkinson Electric Co. | E. L. Fickie Electric Co. |
| Electric Lighting Supply Co. | Foley Electric Co. |
| Santa Ana: | A. Fromhold Electric Co. |
| Cope Electric Co. | W. L. Hutchinson Electric Co. |
| COLORADO | Kansas City Electrical Construction Co. |
| Denver: | W. T. McAuley Electric Co. |
| Claussen Bros. Electrical Works | R. B. Randall Electric Co. |
| Midwest Electric Wiring Co. | Squire Electric Co. |
| CONNECTICUT | United Electric Co. |
| New Canaan: | NEBRASKA |
| The I. B. Woundy Co., Inc. | Omaha: |
| GEORGIA | Samuel K. Hanford |
| Atlanta: | NEW YORK |
| J. M. Clayton Co. | Buffalo: |
| Walker Electrical Co. | Galvin Electric Equipment Co. |
| INDIANA | Reinagel Lighting Co. |
| Gary: | New York City: |
| E. W. Welch & Co. | A. Z. Altberg, Inc. |
| Hammond: | PENNSYLVANIA |
| Electric Contracting & Supply Co. | Columbia: |
| General Engineering & Sales Co. | Wm. H. McDivett |
| Modern Electric Co. | Leacock: |
| Tri-City Electric Co. | H. M. Mellinger |
| IOWA | Marietta: |
| Fairfield: | J. B. Spangler |
| Pentzel Electric Co. | Philadelphia: |
| MAINE | Herman Mayer Co., Inc. |
| Northeast Harbor: | Morris Newmark & Bro. |
| Ernest C. Ober. | TENNESSEE |
| MINNESOTA | Knoxville: |
| Fergus Falls: | Knoxville Electric Co. |
| Hintgen Karst Electric Co. | Tennessee Armature & Motor Works, Inc. |
| St. Cloud: | TEXAS |
| F. A. Axell | El Paso: |
| Frank J. Porwoll. | Joseph E. Morgan |
| MISSOURI | Waco: |
| | White Electric Co. |



A New Steeltubes Feature ... *Water-Tight Fittings*

HERE is a feature which makes every coupling and connection of a STEELTUBES job completely and permanently water-tight . . . the new STEELTUBES Couplings and Connections.

The large illustration above shows how the water-tight coupling joins lengths of STEELTUBES. The smaller picture shows how the water-tight connector is used with fittings, outlet boxes, panels and switch boxes.

A few turns of the nut binds the fitting mechanically . . . bonds it electrically . . . and caulks it against the entrance of water. Easy to use. Need not be taken apart. Just loosen the lock-nut and slide the tubing into place.

Electrical Division
STEEL AND TUBES, INC.

Cleveland, Ohio
(A Unit of Republic Steel Corp.)

I *STEELTUBES Electrical Metallic Tubing is threadless, strong, light and easy to handle. Costs less to buy. Saves time and money on the job. *I*

Steeltubes



STEELTUBES [E.M.T.]* has the same inside diameter as heavy conduit. Made in three sizes ($\frac{3}{8}$ ", $\frac{1}{2}$ " and 1") with diameter and wall thickness shown above. One coupling furnished with each ten-foot length.

STEELTUBES carries the Underwriters' Label, and is approved and listed as Standard by the Associated Factory Mutual.

Contracting News

Information of Interest to Electrical Contractors consisting of items of news, short articles, practical ideas, etc. Our readers are invited to contribute to this department.

California Northern Chapter Holds Quarterly Meetings

Quarterly meetings between members of the executive and advisory committees and selected delegates from each of the communities in the territory were decided upon as the method of continuing the work of the Northern Chapter, California Electragists, at a meeting of the executive committee September 5, in San Francisco. Walter Vance, chairman of the Chapter, presided.

The first such quarterly meeting will be held October 3, in San Francisco, at the office of the association, Call Building, at 2 p.m. To it will come one or two delegates from each of the larger centers in the northern division. Discussion of the status of various phases of contractor dealer relations with other branches of the industry, the programming of future activities and other similar matters will be conducted. At that time also will be decided the time and place of the annual state convention after a report on the matter is heard from the Southern Chapter.

* * *

100 Per Cent Red Seal Field Coverage

The Electric Service League of Toronto, which has six field men using motor cars covering home building in Toronto and immediate suburbs, has carried its field work on behalf of Red Seal to a new high point of efficiency. The league staff now covers all housebuilding, counting the outlets and checking the service and installation of every house and apartment under construction, recording these for use.

Each of the six field men has a definite territory to cover, but the system previously in use was to let each man manage his coverage and inspections of home-building for himself, turning in Red Seal report cards for all Red Seal jobs. Now all houses being built must be checked

and reported on, the non-Red Seal houses being recorded on white cards. The regular building service slips are used for tracing and tabulating the building. By this means the league will know definitely the installation in every house being built, with all particulars, and will be able to carry on a special office campaign against the non-Red Seal builders. It will be able to give definite comparisons between Red Seal installations and non-Red Seal, covering not merely selected groups or districts, but on a city-wide, complete basis.

The Toronto league, of course, leads all leagues operating Red Seal in percentage of houses made Red Seal, and volume of homes made Red Seal. There are now about 12,000 Red Seal homes in Toronto, and the percentage made Red Seal this year is running over 80 per cent. The field staff makes about 25,000 inspections in the course of a year, but the new system of coverage and recording introduces the ultimate of field efficiency.

Motor Section Committee Named

Louis Kalischer, chairman of the A.E.I. Motor Section, has named the following motor specialists to serve on the motor section committee for the year ending October, 1931:

H. H. Tholen, Vice-Chairman, Milwaukee; William J. Wheeler, New York City; F. O. Sievers, San Francisco; J. Roland Stolzenbach, Baltimore; George P. Svendsen, Minneapolis; Charles B. Kaska, Chicago; George H. Jacob, Detroit, and Arnold E. De France, Toledo.

Following his election at the Milwaukee Convention to chairmanship of the Motor Section, Mr. Kalischer announced his plans for mobilization of the motor specialists of the United States and Canada in a vigorous program for improvement of trade conditions in the motor business and industrial repair field.

* * *

Union Employers Organize

A new national association of employers of union wiremen has been organized under the name of The Electrical Guild of North America with L. K. Comstock, New York, president; J. W. Hooley, New York, first vice president; C. H. Chapline, St. Louis, second vice president; Allan Cogeshall, New York, secretary and A. C. Brueckman, Baltimore, treasurer. Offices have been opened at 710 Investment Building, Washington, D. C., with John Kelly in charge as research director.

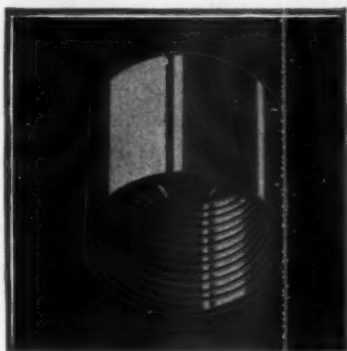
The Guild was organized to carry on the work of industrial co-operation begun ten years ago by the creation of the Council on Industrial Relations.

The object of the Guild is probably best stated by quoting from its constitution, the principles being those adopted by a joint committee of the I. B. E. W. and the Conference Club, March 5 and 6, 1919, and



HEADS MOTOR DEALERS IN SAN FRANCISCO:—H. T. "Horace" Adams of the Farnsworth Electrical Works, San Francisco, Calif., is president of the Electric Motor Dealers' Association of that city.

GREATER SIMPLICITY...FEWER PARTS...
Quicker, Easier Renewals are Features of the New



Caps are one piece, insuring positive contact with the clips.



The knife-blade type Union Renewable Fuse also has an exclusive system of venting, few parts, substantial construction—and a link notched at both ends to permit quick, easy renewals. These features and the rugged grey horn fibre casing are a guarantee of longer fuse life—a new fuse for the price of a link.

UNION JEFFERSON Ferrule Type Renewable FUSES



USERS who have seen the new ferrule type Union Renewable Fuse declare it the simplest, most practical, easiest fuse to renew.

Besides the link there are only three parts—two caps and the casing. And the caps have no loose washers to drop or lose. To renew, simply unscrew the caps—pull out the link, insert a new one, screw on the caps—and the fuse is ready for service.

It is designed to withstand blow out after blowout—reducing yearly fuse costs. Venting which relieves the pressure caused by the blowing of the link, and makes long life possible, is secured by an exclusive method—through the end caps, not the threads.

The link is held diagonally in the heavy horn fibre casing—keeping it from touching and charring the fibre, or interfering with the accuracy of the rating. The link is supplied bent at only one end. The straight end is inserted in slots and bent over, insuring correct fit automatically. Slots are large for easy cleaning and inspection and are so shaped that the link can not twist.

Jot down a sample order for use on a few of your most troublesome circuits. Actual use will prove these superiorities. We will be glad to tell you which wholesalers handle Union Renewable Fuses in your territory.

NEW HANDY FUSE WRENCH



The handiest tool for tightening and loosening ferrule type renewable fuse caps. Comfortably-sized hard wood handle, with hole in each end—one for fuses of 1 to 30 amp., 250 volt size; the other for 31 to 60 amp., 250 volt, and 1 to 30 amp., 600 volt. Your wholesaler has it.

JEFFERSON ELECTRIC COMPANY

1503 West 15th Street, Chicago, Ill.



No. 110 non-adjustable water-tight floor box.



No. 120 Adjustable Water-tight Floor Box without receptacle.



No. 130 adjustable water-tight floor box.



No. 160 floor box, 20 amp., 2 wire.



No. 175 floor box, 30 amp., 2 wire.



No. 180 floor box, 30 amp., 3 wire.

LET US KNOW

When you need Floor Outlet Boxes. We will be glad to quote on your requirements.

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"LATROBE" FLOOR BOXES

are designed to save labor and to meet your requirements. Installation in the finest buildings throughout the country is real proof of superiority.

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FULLMAN MANUFACTURING CO., Latrobe, Pa.

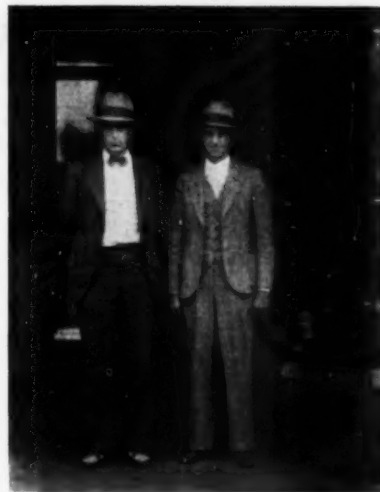
We are in the market for Floor Boxes. Send us your catalog and a FREE copy of the 1930 Nat'l Elec. Code.

Name.....

Address.....

City.....State.....

Our Jobber is.....



INSTALL NEW STORE FRONT:—
L. W. Zeng, left, and F. Leithner, of Leithner and Weishar, Rock Island, Ill., have installed a new store front. The windows contain 90 outlets, controlled by switches and time-clock. This firm has just completed two \$10,000 baseball park lighting installations, the wiring of the Scottish Rite Cathedral and three schools.

later adopted by the 1919 convention of the National Association of Electrical Contractors and Dealers, now the A. E. I.:

"The object of this organization shall be the promotion of the general welfare of the electrical construction industry by (1) discovery through scientific surveys of the needs of the public and of the industry; (2) finding and recommending ways and means of satisfying those needs; (3) defining and harmonizing group activities through the formulation of codes of ethics and of practice for the industry, and by other means agreeable to and in the interest of the public and the industry and conformable to law; and to give effect to the following principles:

1. The facilities of the electrical industry for service to the public will be developed and enhanced by recognition that the overlapping of the functions of the various groups in the industry is wasteful and should be eliminated.

2. Close contact and a mutually sympathetic interest between employee and employer will develop a better working system and will tend constantly to stimulate production while improving the relationship between employer and the community.

3. Strikes and lockouts are detrimental to the interests alike of employee and employer and the public and should be avoided.

4. Agreements or understandings which are designed to obstruct directly or indirectly the free development of trade, or to secure to special groups special privileges and advantages, are subversive of the public

"Better Wiring Materials"

**Xduct and Electroduct—
Rigid Conduit**

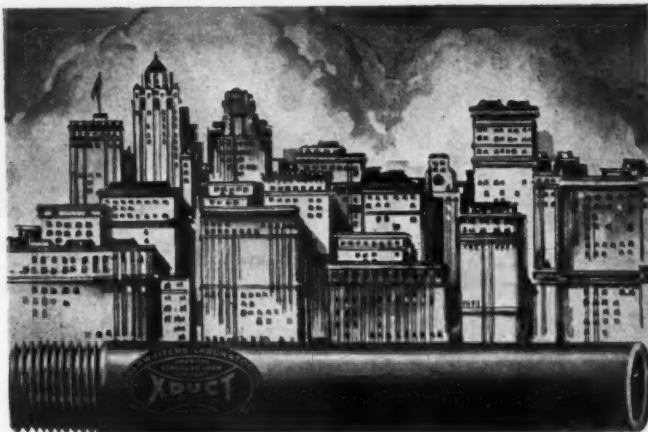
**Red Seal ABC Armored
Bushed Cable—Licensee
Pat. No. 1680713. Other
Pats. Pending.**

**Red Seal Flexible Metallic
Conduit.**

**Loomflex Non-Metallic
Flexible Conduit—Li-
censee Pats. No. 1111806,
No. 1635829.**

**Loomflex Cable-Non-Metal-
lic Sheathed—Licensee
Pats. No. 1203788, No.
1439323, No. 1520680.**

Boxes and Fittings.



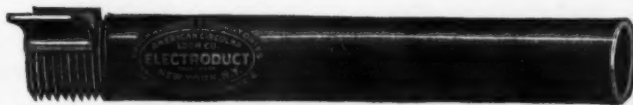
Wiring for Permanency in Office and Commercial Buildings

Permanent wiring in rigid conduit safeguards property values.

What would happen in a typical modern office building—large or small—if electrical service were interrupted? Enormous losses would follow instantly thru idle employees, useless electric office equipment, and lack of elevator service.

Tenants would soon move out if such conditions prevailed; rental values would quickly drop; and the owner's investment in the property would be jeopardized. It is largely because rigid conduit is so universally employed to safeguard electrical systems in commercial buildings that interrupted electric service within these structures is so remarkably rare.

"Xduct" (Galvanized) and "Electroduct" (Enameled) will be found as permanent guardians of electrical wires in many of the country's finest structures. Both are manufactured from spellerized and scale-free pipe—easy to bend, cut and thread, and the threads are sharp and clean.

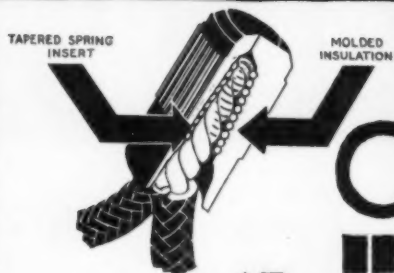


**AMERICAN CIRCULAR
LOOM COMPANY, INC.**
233 Broadway, New York, N. Y.

Offices in Principal Cities



IDEAL UNIVERSAL CONNECTORS



**do
more
than easily
connect wires**

When you use Ideal Connectors you save time, you save money and you do better work. Ideal Connectors screw over the wire ends with ease and eliminate the use of solder, tape and torches.

There is an added feature to Ideal Connectors that electrical contractors should observe. Imbedded in the Ideal Connector is a tapered wire spring. As the Ideal is screwed on over the wires this copper coated steel spring bites the ends of the wires just right, acting as a current carrying sleeve. Thus, every joint made with an Ideal Connector is not only fastened tighter and more securely, and insulated better, but it is actually contacted better and more effectively. Ideals are fully approved by the Underwriters Laboratories and protected under patent No. 1700985.

Certainly you should be using Ideal Connectors. They have modernized wire connecting. A free sample is waiting for you. Just mail the coupon below.



**Ideal Commutator
Dresser Co.**
1041 Park Avenue
Sycamore, Ill.

IDEAL COMMUTATOR DRESSER CO.,
1041 Park Ave.,
Sycamore, Ill.

Gentlemen:

Please send me free sample of Ideal Wire Connector.

Name

Address

Town..... State.....

interest and cancel the doctrine of equality of rights and opportunity, and should be condemned.

5. The public interest is conserved, hazard to life and property is reduced and standards of work are improved, by fixing an adequate minimum of qualifications in knowledge and experience as a requirement precedent to the right of an individual to engage in the electrical construction industry, and by the rigid inspection of electrical work, old and new.

6. Public welfare, as well as the interests of the trade, demands that electrical work be done by the electrical industry.

7. Cooperation between employee and employer acquires constructive power as both employees and employers become more completely organized.

8. The right of employees and employers in local groups to establish local wage scales and local working rules is recognized and nothing herein is to be construed as infringing that right."

In addition to attempting to prevent shortage of work because of labor problems the Guild proposes to conduct economic research to secure an enlarging outlet for the services of electrical contractors, to compile statistics, search out new materials and processes, and compile information of scientific, commercial, industrial and economic value.

Membership is limited to electrical contractors with a construction volume of at least \$25,000 who employ union wiremen. There are three classes of membership; founder member, member, advisory member.

Dues are assessed at one-quarter of one percent of a member's electrical construction business.

Only founder members may vote



SPECIALIZES IN MINE AND INDUSTRIAL MOTOR REPAIRS: J. P. Vine, repair department manager for the Penna. Electric Repair Co. of Pittsburgh. This company does a considerable quantity of mine and industrial motor work.

fresh air

SPEEDS PRODUCTION IN OFFICES and FACTORIES

More than 200 uses for "Buffalo Breezo" fans with large dependable motors that run quietly and give long uninterrupted service.



MAIL COUPON TODAY

BUFFALO FORGE CO.
504 Broadway, Buffalo, N. Y.

Gentlemen: Please send me, without obligation on my part, complete information on how to make money on "Buffalo Breezo" ventilating equipment.

Name.....

Address.....

City..... State.....



BIG executives directing large organizations are human . . . They are sold on fresh air just the same as the public at large. They recognize cigar smoke, stale, stuffy atmosphere and poisonous fumes are detrimental and hinder clear thinking, slowing up production. They know fresh air banishes sleepiness and dullness. Good ventilation pays big dividends . . . But it's up to you, Mr. Contractor, to get the ventilation job, yourself. You have got to go after these office and industrial heads and show them how you propose to remedy conditions. You can solve every ventilating problem with "Buffalo Breezo" equipment. Our engineers gladly will assist you in this profitable business. Write today.

BUFFALO FORGE COMPANY

504 Broadway, Buffalo, N. Y.

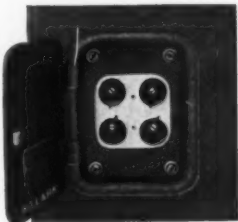
In Canada: Canadian Blower & Forge Co., Ltd.
Kitchener, Ont.

BUFFALO- BREEZO

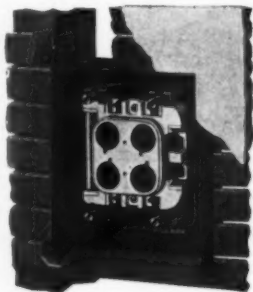
THE PUBLIC ALREADY IS FRESH AIR MINDED . . .

KILLARK RESIDENCE PANELS

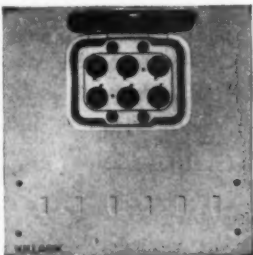
Bring a new standard of service to the user and convenience to the contractor



Four circuit, flush type Killark Residence Panel. Notice the screws which hold the trim are not visible when the door is closed.

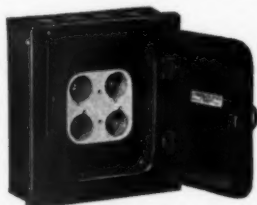


Showing method of attaching Killark Residence Panels to the studding. Notice how cut lathing is supported in a channel slot and how plaster ground is fixed automatically. No bridging is required.



The Killark switch-type residence panel for use where it is necessary to have a separate switch for each circuit. These panels are furnished in the flush type only.

Here is the residence panel the contractor has been looking for. It has been designed by a contractor of eighteen years experience, and made expressly to take the trouble out of residence panel installations. Note these features: A mounting bracket that nails directly to the studding, automatically plumbing the panel and the correct plaster ground. A lath support which firmly holds the unsupported end of the lathing and a balancing and adjusting device that permits quick adjustment of the block to meet any irregularities of the finished plaster.



The Killark surface-type residence panel for use on unplastered walls and on the plastered walls of finished buildings. This cut shows a four circuit panel, finished in black enamel.

Flush & Surface Types; Interchangeable Blocks

No bridging is required in installing Killark Residence Panels. The slotted groove on the right hand side forms a support for the cut lathing and the upper and lower ends of this groove hook over the top and bottom lath. The trim is attached by specially designed adjustable screws that are not visible when the door is closed. The blocks are built for 2 or 3 wire main service, and either single or double fusing. In flush type cabinets, which come in three sizes, the blocks are interchangeable to accommodate fuses as follows: 2 and 4, 6 and 8, 10 and 12. The finish is metallic grey lacquer. Write for price sheets and details.

Killark Electric Manufacturing Co.
3940 Easton Ave. . . . St. Louis, Mo.



HAS SELECTED CUSTOMERS:— Frank L. Ham, of Worcester, Mass., specializes in customers of the bigger and better type. Mr. Ham does work for a limited number of customers who are willing to pay fair prices for good work.

for officers during a period of seven years, after which members may vote.

In addition to the officers, the executive committee consists of six members. They are: W. W. Clark, Cleveland; A. J. Hixon, Boston; J. G. Livingston, New York; David Lurvey, Chicago; C. D. Pierce, Detroit, and G. M. Sanborn, Indianapolis.

The constitution provides for sections, and rules have been drawn up governing the manner in which they may be set up and operated.

The Guild starts off with a founder membership of 68 of the larger electrical contractors. Its aims and constitution are fully described in a prospectus just recently off the press.

* * *

Cincinnati Contractors Elect Officers

The annual election of officers of the Electrical Contractors' Division of the Cincinnati Electric Club was held Monday, August 25, Chamber of Commerce Building. The officers elected were: William H. Dimmett, re-elected president; Fred Hittinger, first vice president; Carl S. Zink, second vice president; and J. F. Riehle, secretary-treasurer. The Board of Governors comprise Sam F. Keller, Thomas Gleason, E. W. Edmonds, Martin Wehr, E. S. Kerchner, George Hinnekamp, John Beltzhoover, John Wengert, Harry Hischemiller and Fred Connor. J. M. McCarthy was retained as manager and Miss Katherine Lanier as secretary.

The organization recently celebrated its first anniversary by having a stag outing.

YOU ARE THE MAN TO LAND MORE WIRING JOBS



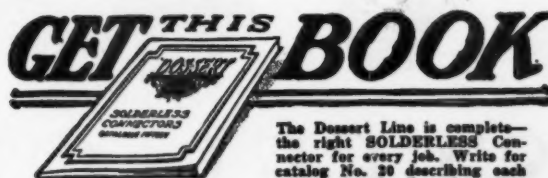
DOSSERT
SOLDERLESS CONNECTORS
SPEED THE WORK

. . . *sub-stations*
. . . *industrials, etc.*

in your territory are all live and immediate prospects. One bad joint can ruin the best wiring system. With Dossert connectors you can handle difficult jobs faster and more accurately. Dossert Solderless Connectors guarantee the job for you.

*Profitable and
easy to use*

Prices are right — deliveries prompt and Dossert products are of highest quality always. You can do more work in less time and make more money on every job if you start now using Dossert Solderless Connectors.



The Dossert Line is complete—the right SOLDERLESS Connector for every job. Write for catalog No. 20 describing each product in detail and various applications which will give you latest installation tips.

DOSSERT & COMPANY

242 WEST 41ST STREET

NEW YORK, U. S. A.



PLAY SAFE

Use

"UNIVERSAL"



Watertight Conduit Couplings

IMPROPER connecting of conduits at the couplings is dangerous. Your customers realize this and are already sold on the "Universal" Watertight Conduit Coupling. This product is of improved design and is the only type on the market that makes a water-tight joint when installed.



Write today for the new
Steel City Catalog



STEEL CITY ELECTRIC COMPANY

Pittsburgh Penna.

Southwestern Inspectors to Meet

The Southwestern Section of the International Association of Electrical Inspectors will hold its annual meeting at the Hotel Maryland, Pasadena, Calif., on October 5, 6, 7 and 8.

Among the speakers will be William S. Boyd, president of the I.A.E.I.; A. Penn Denton, engineer with the National Electrical Manufacturers' Association; H. B. Kirkland of the Society for Electrical Development; Professor Fenner of the California Institute of Technology, Pasadena; H. C. Rice, Southern California Edison Company, Los Angeles, and Victor H. Tousley, secretary-treasurer of the I.A.E.I.

* * *

Illuminating Engineers to Convene

The twenty-fourth annual convention of the Illuminating Engineering Society will be held in Richmond, Va., October 7 to 10 inclusive. This will be the first convention of the society to be held south of the Mason-Dixon line.

An outstanding business program has been provided which will deal with the commercial, technical, educational and aesthetic aspects of lighting. Among the many subjects covered will be "Automatic Control of Light," by E. H. Vedder and S. G. Hibben; "Light Reflection Factors of



REMODELS GAS FIXTURES AS A HOBBY:—H. Jensen of Brooklyn has a fine collection of electric lamps made from discarded gas fixtures. These include onyx, brass and crystal. Most of them come from fine old Brooklyn mansions that have been remodeled for rooming houses.



A PORTABLE CONDUIT BENDER

Contractors! Here is a new hydraulic conduit bender that will save time and money for you. One user stated that on a recent job, using a Greenlee 4½-Inch Bender, all his conduit was in place in two days, where with old time methods it would have taken him a week. Another said he saved over \$50.00 in fittings and couplings and seven hours in labor while making seven bends in 75 feet of 4-inch conduit.

Not only does it bend conduit fast, but it does the work in a clean cut accurate way that leaves a bend round and true with very little distortion in the metal. The bend is made horizontally so that any length of pipe can be put in the machine without running against the floor. Benders are portable and can easily be carried from place to place.

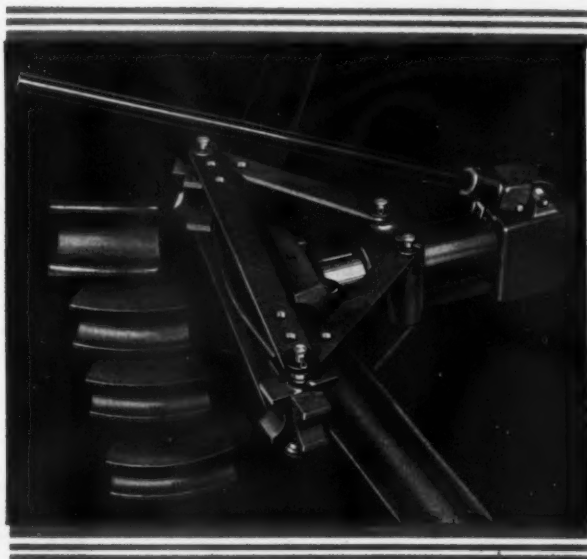
Mail the coupon today for detailed information and discounts.

LIST PRICES:

No. 770 Bender \$170.00
No. 775 Bender \$235.00

Write for your Discount

GREENLEE TOOL CO.
Rockford, Ill., U. S. A.



No. 770 bends 1¼, 1½, 2, 2½ and 3-inch conduit and weighs 96 pounds without shoes. No. 775 bends 2½, 3, 3½, 4 and 4½-inch conduit and weighs 157 pounds without shoes. Shoes for both machines are carried in metal boxes having convenient handles.



GREENLEE TOOL CO., Rockford, Illinois

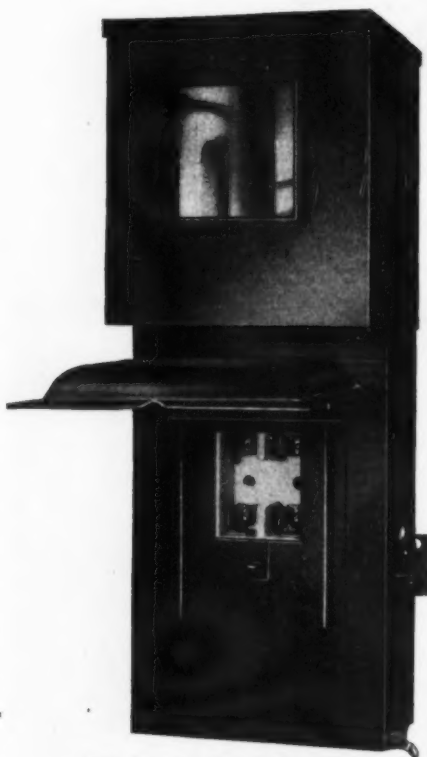
Please send full information and prices on your Conduit Benders.

Name

Street..... City.....

Jobber or Dealer.....

WADSWORTH



60-Ampere Weatherproof Type
Switch Open, Bored Cover Raised, Sliding Cover
Open, Service Fuses Accessible—100% Safety

A Wadsworth quality product of sound design, good material and careful construction.

Switches having the same ample wiring space and construction as Wadsworth Indoor Accessible Fuse Switches.

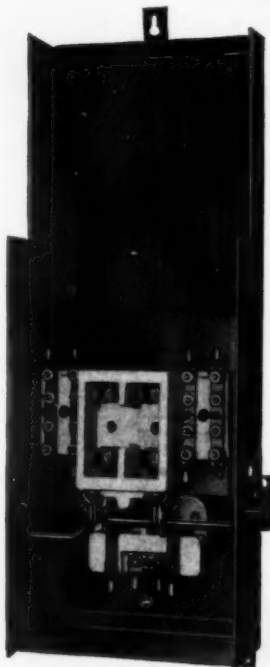
Switches that provide the simplest and the most practical method of making an Outdoor — Safety Switch—installation.

For complete information send for our Bulletin No. 22 or see your Jobber.

The WADSWORTH ELECTRIC MFG. CO. INC.
Covington, Kentucky.

ACCESSIBLE
FUSE
OUTDOOR
and
WEATHERPROOF
METER SERVICE
SWITCHES
100%
SAFETY

Made in 30 Ampere Plug
Fuse and 60 and 100
Ampere N. E. C. Fuse
Type



60-Ampere Weatherproof Type
Illustrating Interior Construction.
Note Switch Blades in Clear Sight.
Ample Space for Wiring, Setting,
and Adjusting Meter.



BROOKLYN'S LADY CONTRACTOR:—Miss M. S. Brown of Brooklyn, N. Y., has operated a contracting business for the past fifteen years. The firm was established by her father and she became familiar with the business through helping with office work. Later she inherited the business and now operates with the aid of a foreman.

Acoustical Materials," by A. L. Powell and C. L. Dows; "Modern Lighting with Control Lenses," by H. L. Logan; "Floodlighting from Ornamental Standards," by W. T. Blackwell and Charles Gallo; "Code of Street Lighting," by Preston S. Millar; "Lighting for Outdoor Sports," by J. A. Summers; "Floodlighting from an Architect's Viewpoint," by C. C. Zantinger, and "Industrial Uses of Ultraviolet," by Dr. E. E. Free and C. C. Clark. Many other lectures are scheduled. The business program will be augmented by entertainment and recreational features, including the inauguration of a new Virginia Chapter, which is to be observed by appropriate exercises.

* * *

Northwest Inspectors Urge Adoption of National Code

To replace obsolete regulations now in force, adoption by the state of Washington of the national electrical code, and by the state department of labor and industries of the national electric safety code was urged in resolutions passed recently at the fifth annual convention of the Northwestern section of the International Association of Electrical Inspectors.

These resolutions, brought in by the legislative committee for Wash-

(Continued on page 93)

50% EASIER PULLING

CIRCUIT TESTING
IN ONE THIRD
THE TIME

We'll gladly serve you
through your jobber



United States Rubber Company
1790 BROADWAY - NEW YORK
Branches in Every Industrial Center

"U.S." RAINBOW WIRES

There is a Good Wiring and Merchandising Profit Installing Modern Show Case Lighting



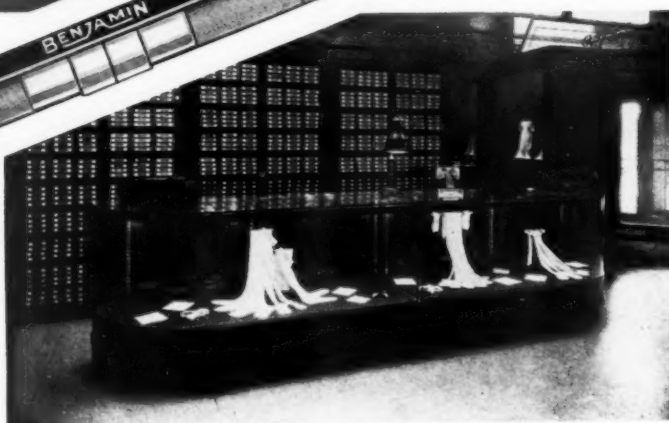
BENJAMIN

Sectional

Show Case Lighting Equipment



Easy to Install Sections
to Fit any Length of
Straight or Curved
Show Cases



IN the installation of Benjamin Sectional Show Case Lighting Equipment you have one of the biggest opportunities of the seasonal refixturing and renovating of store lighting equipment that is now going on.

Put in a trial installation in the darkest, most neglected part of the store. Show the storekeeper the striking results in sales increases when the show case is properly lighted.

Benjamin Show Case Lighting Equipment is neat and inconspicuous. No part of the lamp or reflector

interferes with a clear view of the goods on display. The light is shielded from the eyes of the sales people back of the counter.

Burned out lamps are easily replaced without disturbing the contents of the show case. Construction complies with rules requiring grounding or polarization.

Send for full information on making up combinations to fit various lengths and shapes of show cases and methods of installation.

BENJAMIN ELECTRIC MFG. CO.,

General Offices and Factory:

DES PLAINES [Chicago Suburb] ILLINOIS

Divisional Offices:

Chicago

111 N. Canal Street

New York
247 W. 17th Street

San Francisco
448 Bryant Street

Suggested RESALE PRICES *for* Wiring Supplies

The prices listed on the following pages are merely suggested resale prices for the commonly used standard supplies and equipment employed in electrical construction work. They are based on average current trade costs throughout the country, very largely obtained from jobbers' price sheets, and are also based on average overhead charges.

* * *

Obviously, prices can be suggested only for the widely used products that are nationally distributed, and under no circumstances is this section intended to function as a directory of products or manufacturers.

* * *

The publishers wish to again emphasize that these are merely *suggested* resale prices and while every effort is made to make them universally applicable and accurate we cannot guarantee them or assume any responsibility for errors.

* * *

The prices appearing in this section will be completely revised each month as trade prices may change.

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by the

Electrical Trade Publishing Co.

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Suggested Resale Prices for Wiring Supplies

These are merely suggested resale prices for the commonly used products that appear regularly on jobber price lists. They are figured on generally accepted principles for computing resale prices and should cover average conditions but are not guaranteed. (See note on title page.)

A-SUNDRIES

ASBESTOS

Asbestos Millboard—Per Pound—30c.

ANNUNCIATORS

House Type

Number Drops	Edwards No. 81 or Faraday No. 373	Dixie White Enamel	Edw. & Faraday	"P & W" Competition Automatic	"P & W"
2	\$ 9.90	\$ 9.85	\$13.00		
3	10.75	11.60	14.80		
4	14.85	13.05	16.40	\$13.25	\$16.50
6	16.50	16.40	19.40	16.50	19.80
8	16.50	19.40	22.75	19.80	24.75
10	10.00	22.75	26.00	23.00	29.70
12	22.25	25.90	29.15	26.40	
14	24.75				
16	27.25				
Ex. Drops		2.25	3.00		

(All other Annunciators—Sell at List less 10%)

COUCH

Electrical Reset

Number of Drops	Style D Face Type Wood Face		Style F Flush Wood Face		Style F Flush Metal Face	
	Number	Price	Number	Price	Number	Price
4	DA 4	\$21.50	FA 4	\$44.80	FA 4	\$49.80
6	DA 6	36.50	FA 6	49.30	FA 6	55.00
8	DA 8	31.50	FA 8	53.80	FA 8	59.70
10	DA 10	36.50	FA 10	58.25	FA 10	64.70
12	DA 12	43.10	FA 12	64.25	FA 12	71.80
15	DA	.....	FA 15	73.10	FA 15	81.50
16	DA 16	56.50	.....	.....	.....	.....
20	DA 20	69.75	FA 20	88.15	FA 20	98.00

Add for each drop on any of above—\$4.15 per drop

ADAPTORS & REDUCERS

For Sockets and Vases

	Arrow	Benj. Bryant	G. E.	Hubbl.	Price
Mogul to Medium	292	98	421	070	\$0.50
Medium to Candelabra	392		392	35099	.25
Candelabra to Miniature	391		391		.20
Medium to Intermediate	492		9691	2644	.25
Parallel Blades to Medium		1006	KF	682	.30
Plug in Pull Socket	35024		35024		1.90
Benjamin Vase Adapters No. 831, 832, 833—Each					2.00

SOCKET EXTENSIONS

Benjamin No. 91 Socket Extension—Each	\$.45
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ATTACHMENTS FOR PULL SOCKETS

For 8" to 14" Reflectors No. 5828—5829—5957—5958	\$.55
For 16" to 20" Reflectors No. 5953—5954—5959—5960	.65

ADJUSTERS

For Cords

	Price
Universal Cord Adjuster Standard No. 1417 3/4" Long	\$.10
" " " Factory No. 1418 5/8" Long	.20
" " " Reinforced No. 1419 5/8" Long	.22
Ball Type No. 1403 & 5 for Type C Cord. 3/4 hole	.10
" " No. 4634 & 5 for Reinforced Cord. 3/4 hole	.42

ACORNS & TASSELS

Luminous Acorns and Pendants for Pull Chain	\$0.30
Brass Acorns and Tassels for Pull Chain	.10
Brass Acorns Adjustable for Linen Cord	.10

BOXES, SWITCH

STANDARD SWITCH BOXES

	Depth	Without clamps	Price Black Galvd.
For Loom	2, 2 1/4 or 2 1/2		\$.16 \$.21
"	2, 2 1/4 " 2 1/2	With	.18 .22
For Metallic Cable	2, 2 1/4 " 2 1/2	With	.16 .21
"	3	With	.32 .36
For Rigid Conduit	1 1/2 to 2 1/2	Without	.16 .21
"	3 & 3 1/2	Without	.32 .36
Spacers—For Spacer only deduct from any of above prices			.04 .05

With BRACKETS or EXTENDED EARS or LATH SUPPORTS

	Depth	Without clamps	Price Black Galvd.
For Loom	2, 2 1/4 or 2 1/2		\$.20 \$.24
"	2, 2 1/4 " 2 1/2	With	.22 .26
For Metallic Cable or Loom	2, 2 1/4 " 2 1/2	With	.28 .33
" Rigid Conduit	2 to 2 1/2	Without	.25 .30

SECTIONAL BOXES

	Depth	Without clamps	Price Black Galvd.
For Loom or Romex	2-2 1/4 Deep		\$0.20 \$0.22
" Rigid or Flex Conduit	2 & 2 1/2		.22 .24
" Flex. Met. Conduit Only	2		.25 .27

SOLID GANG BOXES—GALVANIZED

	2 Gang	3 Gang	4 Gang	5 Gang	6 Gang	7 Gang	8 Gang
Price of Box	\$.85	\$1.25	\$1.65	\$2.20	\$4.25	\$6.45	\$8.50
Price of Cover	.42	.62	.85	1.05	2.00	3.55	3.95

TANDEM SWITCH BOXES

	2 Gang	3 Gang	4 Gang	2 Gang Galvanized	3 Gang	4 Gang
Loom, BX or Conduit	2 Gang	3 Gang	4 Gang	2 Gang	3 Gang	4 Gang
Tandem Boxes 1 1/2 & 2" Deep	\$.68	\$1.10	\$1.63	\$.81	\$1.23	\$1.90
" 2 1/2 & 3" " "	.81	1.23	1.90	.95	1.37	2.18

DOOR SWITCH BOXES

	Black	Galvd.
For Rigid or Flexible Conduit without Clamps	\$.50	\$.55
" " " " with Clamps	.55	.65

LAUNDRY BOXES

	Black	Galvd.
Gem-Appleton or Raco, etc., with Single Receptacle	\$1.10	\$1.25
" " " " Duplex	1.25	1.35

For Concrete Boxes See Page PL-5.
For Solid Gang Boxes See Page PL-5.

BOXES & COVERS, OUTLET

CEILING BOXES, ROUND

Universal Nos.	Size and Description	Depth	Knockouts Bottom Side	Price Black Galvd.
36115	3 1/2" With Lugs	1 1/2"	3-1/2" & 4" Loom	\$0.12 \$0.13
36116	3 1/2" No	1 1/2"	3-1/2" & 4"	.10 .12
36125	3 1/2" With	1 1/2"	3-1/2" & 4"	.14 .16
36126	3 1/2" No	1 1/2"	3-1/2" & 4"	.12 .14
36126	3 1/2" Flat Plate with Clamps	1 1/2"	3-1/2" & 4"	.09 .11
56111	4" With Ears	1 1/2"	5-1/2" or 3" K.O.	.10 .12
56112	4" No	1 1/2"	5-1/2" or 3" K.O.	.09 .11
56115	4" With Ears-Loom & Cond.	1 1/2"	3-1/2" & 6" Loom	.11 .14
56116	4" No	1 1/2"	3-1/2" & 6"	.09 .11
56121	4" With Ears	1 1/2"	5-1/2" or 3" K.O.	.14 .16
56122	4" No Ears	1 1/2"	5-1/2" or 3" K.O.	.10 .12
56125	4" Ears-Loom & Conduit	1 1/2"	3-1/2" & 6" Loom	.16 .19
56126	4" No Ears	1 1/2"	3-1/2" & 6"	.14 .16
56712	4" Flat Plate	1 1/2"	5-1/2" or 3" K.O.	.09 .11

OUTLET BOXES, OCTAGON & ROUND

Universal Nos.	Size and Description	Depth	Knockouts Bottom Side	Price Black Galvd.
24151	3 1/4" Oct.-Conduit Box	1 1/2"	1-1/2" 4-1/2"	\$0.11 \$0.13
24151	3 1/4" " " With Stud	1 1/2"	1-1/2" 4-1/2"	.12 .15
24151 FS	3 1/4" " " " "	1 1/2"	1-1/2" 4-1/2"	.21 .23
54151	4" Oct.-Conduit Box	1 1/2"	5-1/2" 4-1/2"	.14 .17
54151	4" " " " " " "	1 1/2"	5-1/2" 4-1/2"	.16 .19
54151	4" " " " " " "	1 1/2"	5-1/2" 4-1/2"	.21 .23
54155	4" " " " " " "	1 1/2"	5-1/2" 12-1/2"	.20 .23
54171	4" " " " " " "	2 1/4"	1 1/2-1 1/2-1 1/2"	.25 .28

Boxes & Covers

COVERS
For 3 1/4"-3 1/2"-4" Octagon & Round Boxes

			Black	Galvd.
24C-1	3 1/4"	Blank Cover Flat	\$0.05	\$0.07
24C-2	3 1/4"	Raised	.05	.07
24C-6	3 1/4"	Flat with 1/2" K. O. in Center	.06	.08
24C-7	3 1/4"	Raised with 1/2" K. O.	.06	.08
24C-12	3 1/4"	1/2" Metal Bushing	.06	.08
24C-28	3 1/4"	Spider for Switch or Receptacle	.07	.09
24C-31	3 1/4"	Raised Federal Sign	.06	.08
24C-33	3 1/4"	Flat 1 1/4" hole for other	.20	.22
24C-35&36	3 1/4"	Raised 1 1/4"	.06	.08
24C-39	3 1/4"	Flat for fluted devices	.18	.20
54C-1	4"	Blank Cover Flat	.08	.10
54C-2	4"	Raised	.06	.09
54C-3	4"	Raised Open 3/4" Deep	.08	.10
54C-6	4"	Flat with 1/2" K. O. in Center	.06	.09
54C-7	4"	Raised with 1/2" K. O.	.07	.10
54C-12	4"	1/2" Metal Bushing	.06	.09
54C-28	4"	Spider for Switch or Receptacle	.07	.09
54C-31	4"	Raised Federal Sign	.07	.09
54C-33	4"	Flat 1 1/4" Hole for Std.	.20	.22
54C-35-6	4"	Raised 1 1/4" Ring	.06	.08
54C-39	4"	Flat for Fluted Devices	.20	.22
54C-48	4"	Raised 3/4" High Open	.07	.10

OUTLET BOXES—Square 4" & 4 1/16"

Uni- versal No.	Size and Description	Depth	Knockouts Bottom Side	Price Black Galvd.
51151	4" Sq. Comb. Gas & Elect.	1 1/2"	5-1/2" 8-1/2"	\$0.16 \$0.20
51151	4" Sq. Comb. Gas & Elect.	1 1/2"	5-1/2" 8-1/2"	.18 .22
52151	4" Conduit Box	1 1/2"	5-1/2" 10-1/2"	.16 .20
52151	4" Conduit Box	1 1/2"	5-1/2" 10-1/2"	.18 .22
52171	4" Conduit Box	2 1/4"	5-1/2" 10-1/2"	.60
72151	4 1/16" Conduit Box	1 1/2"	5-1/2" or 3/4" 1/2" or 3/4"	.60
72171	4 1/16" Conduit Box	2 1/4"	5-1/2" 1/2" 3/4" 1"	.64

COVERS For 4" & 4 1/16" Square Boxes

52C-1	4" Sq. Blank Flat			\$0.08	\$0.10
52C-2	4" Raised			.11	.13
52C-3	4" Raised 1/2" High Open			.12	.15
52C-6	4" Flat with 1/2" K. O. in Center			.10	.12
52C-7	4" Raised with 1/2" K. O.			.13	.16
52C-12	4" 1/2" Metal Bushing			.11	.13
52C-13	4" for Rect. Switch or Recept.			.10	.12
52C-14	4" for Rect. Switch or Recept.			.10	.13
52C-15	4" for Rect. Switch or Recept.			.15	.17
52C-16	4" for Rect. Switch or Recept.			.18	.21
52C-17	4" for Rect. Switch or Recept.			.13	.16
52C-18	4" for Rect. Switch or Recept.			.15	.17
52C-19	4" for Rect. Switch or Recept.			.21	.23
52C-21	4" for Rect. Switch or Recept.			.23	.26
52C-28	4" Flat Spider for Snap Switches			.15	.17
52C-31	4" Raised for Sign Rec.			.09	.10
52C-35-36	4" Fluted Devices			.14	.16
52C-39	4" with 2 1/4" Opening			.10	.13
52C-48	4" For French Fixture			.34	.37
52C-57	4" Single Sw. 1/4" High			.10	.12
72C-1	4 1/16" Sq. Blank Flat			.27	
72C-2	4 1/16" Raised			.32	
72C-3	4 1/16" Raised			.34	
72C-7	4 1/16" With 1/2" K. O. in Center			.34	
72C-12	4 1/16" 1/2" Bushing			.34	
72C-14-15	4 1/16" 3/4" & 1" for Switch or Rec.			.36	
72C-18	4 1/16" 2 Devices			.50	
72C-48	4 1/16" Open 1/2" High			.34	
Special	4" Cover for One Push or Toggle Switch or Single				
Covers	or Duplex Receptacle			.18	.23
For Red	4" Cover Two Push or Toggle Switches or Two				
Seal Work	Receptacles or Any Combination of Two Devices			.32	.36

EXTENSION RINGS For Octagon & Square Boxes

25151	3 1/4" Octagon Ring—1 1/4" Deep	\$0.23	\$0.25
53151	3 1/4" or Square Ring 1 1/4" Deep	.25	.27
73151	4 1/16" Square Ring 1 1/4" Deep	.60	
53171	4" Octagon Ring 2 1/4" Deep	.44	.48
53171	4" Square 2 1/4"	.70	
73171	4 1/16" 2 1/4"	.65	

HANDY OR UTILITY BOXES & COVERS
For Use With Rigid Conduit

Description	Universal Numbers	Price
Box 3 1/4"x1 1/4"x1 1/4" For Rigid Cond.	58151	\$0.22
Box 4x2 1/4"x1 1/4" For Rigid Cond.	58361	.22
Box 4x2 1/4"x1 1/4" For Rigid Cond.	58371	.22
Box 4x2 1/4"x2 1/4" For Rigid Cond.	58371	.22
Box 4x2 1/4"x2 1/4" For Rigid Cond.	58C1	.60
Cover Flat Steel Closed	58C1	.10
Cover Porcelain with Holes	58C5	.13
Cover for Sgle. Receptacle	58C5	.18
Cover for Duplex Receptacle	58C7	.18
Cover for Toggle Flush Switch	58C30	.18
Cover for Sgle. Push Switch	58C3	.18
Cover for Sign Receptacle	58C33	.18
Cover for Snap Switches	58C28	.18
Cover with 1/2" K. O.	58C6	.16
Cover with 1/2" or 3/4" Nipple	58C6	.16
Cover with Bushing for Cord	58C11	.16

CONCRETE BOXES WITH COVERS

Depth	1 1/2"	2"	2 1/4"	3"	3 1/2"	4"	5"	6"
Box & Back Plate with 1/2" Stud	\$0.27	\$0.32	\$0.35	\$0.38	\$0.40	\$0.45	\$0.50	\$0.60
Box & Back Plate less 1/2" Stud	.23	.27	.30	.34	.36	.40	.45	.55
Plate only 4 1/2" Round without Fixture Stud 3 1/2" and 2 1/4" K. O.								\$0.10
Plate only 4 1/2" Round with 1/2" Fixture Stud 3 1/2" and 2 1/4" K. O.								.15
Plate only 4 1/2" Round with 1/2" Fixture Stud 3 1/2" and 2 1/4" K. O.								.20

SOLID GANG BOXES

Covers Extra

Galvd. Only	2	3	4	5	6	7	8
Box Price	\$1.75	\$1.15	\$1.50	\$2.00	\$3.75	\$5.65	\$6.10
Cover	.38	.55	.75	.93	1.80	3.20	3.55

BOXES, OUTLET

NEW CODE OUTLET BOXES
Box Only

Size	Stud	Clamps	Bush Plates	Price	
3 1/4"x1 1/4" Round	Yes	Two	No	\$.23	
3 1/4"x1 1/4" Round	Yes	Two	No	.27	
3 1/4"x1 1/4" Octagon	No	Two	Two	.23	
3 1/4"x1 1/4" Octagon	Yes	Two	Two	.27	
3 1/4"x1 1/4" Round	No	Two	No	.18	
3 1/4"x1 1/4" Round	Yes	Two	Two	.23	
3 1/4"x1 1/4" Octagon	No	Two	Two	.23	
3 1/4"x1 1/4" Octagon	Yes	Two	Two	.27	
4 1/4"x1 1/4" Octagon	No	Two	Two	.27	
4 1/4"x1 1/4" Octagon	Yes	Two	Two	.32	
G.E. Cable Boxes for Straight Electric or Combination No. 5200-01					.20
Hope Cable Boxes for Straight Electric or Combination No. 2 & 4 & 14					.20
Thomas & Betts No. 565-66-67-68 Standard Cable Boxes					.22
Thomas & Betts No. 553-554 Dead Ground Cable Boxes					.35
Thomas & Betts No. 160-161 Flush Wall Type Cable Boxes					.50

BAR HANGERS FOR OUTLET BOXES
Boxes Extra

(With 1/2" Fixture Stud)	Price
(With 1/2" Stud add 5c ea.)	Margin
Straight Bar 18" Long	\$0.23
Straight Bar 24" Long	.30
Shallow Offset Bar 19 1/4" Long	.28
Shallow Offset Bar 24" Long	.35
Deep Offset Bar 19 1/4" Long	.28
Deep Offset Bar 24" Long	.35
Straight Old Work Bar 12"	.15
Box Cleat Bar 21"	.12
Straight Saddle Bar	.20

SET-UP BOXES WITH BARS

Size	Ears	Clamps	Bush Plates	Galvd. Price
3 1/4"x1 1/4" Round	No	None	None	\$0.30
3 1/4"x1 1/4" Round	No	Two	None	.35
3 1/4"x1 1/4" Round	Yes	None	None	.35
3 1/4"x1 1/4" Round	Yes	Two	None	.40
For New Code Boxes				
3 1/4"x1 1/4" Oct.	Yes	Two	None	.45
3 1/4"x1 1/4" Oct.	Yes	Two	Two	.50
3 1/4"x1 1/4" Round	No	Two	None	.45
3 1/4"x1 1/4" Round	No	Two	Two	.45
4 1/4"x1 1/4" Oct.	Yes	Two	None	.50
4 1/4"x1 1/4" Oct.	Yes	Two	Two	.50
For Conduit				
4 1/4" Round	No	None	None	.30
4 1/4" Round	Yes	None	None	.35

BUSHINGS & LOCKNUTS

BUSHINGS & LOCKNUTS
For Rigid Conduit

	1/2"	3/4"	1"	1 1/4"
Locknuts—Each	\$0.01	\$0.01 1/4	\$0.02 1/4	\$0.03
Bushings—Each	.02	.02 1/2	.05	.08
Locknuts—Each	\$0.08	\$0.11	\$0.19	\$0.32
Bushings—Each	.10	.20	.30	.40
			.88	1.40

PORCELAIN CLAMP BUSHINGS

"Federal" or Equivalent

No.	K. O.	Inside Size	Outside Size	Wire Size	Bushing Each	Extra Ring
A-1	1/4"	1/4"	1/4"	No. 10	\$0.08	\$0.04
A-1 1/2	1/2"	1/2"	1/2"	No. 10	.10	.04
A-2	3/4"	3/4"	3/4"	No. 8	.10	.04
A-3	1"	1"	1"	No. 3	.12	.05
A-4	1 1/4"	1 1/4"	1 1/4"	No. 00	.16	.07
A-5	1 1/2"	1 1/2"	1 1/2"	450 CM	.21	.10
A-6	2"	2"	2"	1 Mill. CM	.46	.12
B-1	1/4"	1/4"	1/4"	No. 10	.21	.04
K-1	1/4"	1/4"	1/4"	No. 10	.32	.04
K-2	1/2"	1/2"	1/2"	No. 8	.37	.05

"MULTI" PORCELAIN CLAMP BUSHINGS

No.	Inside Size	Outside Size	For Wires	Price Each Complete
10	1/4"	1/4"	14 B & S	\$0.08
12	3/8"	3/8"	14 B & S	.12
15	1/2"	1/2"	14 B & S	.10
20	3/4"	3/4"	6 B & S	.10
30	1"	1"	2 B & S	.12
40	1 1/4"	1 1/4"	000	.20
50	1 1/2"	1 1/2"	350,000	.30
55	1 3/4"	1 3/4"	600,000	.38
60	2"	2"	1,000,000	.45

PORCELAIN NO CLAMP BUSHINGS
Multi- With Spring Clip, Not Threaded

Catalog No.	Multi	90A	90B	91	92A	92B
Size of Hole	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
To Fit Hole	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Price	\$0.06	\$0.06	\$0.06	\$0.07	\$0.07	\$0.07



Ivanhoe Safety Type Suspension Fixture. Dull bronze or polished bronze.



Note Z-hickey switch, adjustable suspension, swivel joint and screw ring which allows canopy to drop down for greater freedom of work. Z-hickey eliminates strain on canopy when installing or at any other time. It takes the direct pull.



Shows patented mechanism for holding glassware in ceiling type fixture. Worth close study.



Ivanhoe Safety Type Stem Suspension Fixture. Get the swivel joint idea. It keeps the light straight.

IT'S HARVEST TIME for LIGHTING PROFITS

RIGHT NOW the demand for better lighting is at its peak.

Merchants, with an eye to holiday business, are figuring on better lighting of their stores to speed up lightening of their stocks.

Store executives and managers facing the seasonal increases are studying the lighting of their establishments carefully to step up illumination and improve appearances. Even if only department changes are made fixtures will be needed.

Contractors can cash in now on these three complete Ivanhoe lines of fixtures that meet every Commercial Lighting requirement.

IVANHOE SAFETY FIXTURES have achieved nation-wide popularity because they are so safe, economical, and easy to install. The Ivanhoe Swivel Joint insures that the fixture will always hang correctly. It also permits the unit to swing through an angle of 30 degrees, making it easier to relamp and clean glassware. All wiring is concealed; this reduces maintenance cost and improves the appearance of the job.

IVANHOE SUPERSERVICE LINE is a line of 22 gauge fixtures, canopies and holders of brass, with brass loops and chains. As its name implies, this line is of superior quality, appearance, durability and efficiency and satisfies the most exacting installation requirements.

IVANHOE MERCHANDISING LINE is a low price line that meets average needs—but is of better than average quality.

These three complete lines are in both ceiling and suspension type, with various size holders to meet every requirement of Commercial Lighting when used with the many Ivanhoe enclosing globes in both the direct and indirect types, plain and decorated. Write for our comprehensive illustrated catalog on commercial lighting fixtures.

Now is the time to reap the harvest of fall and winter lighting business. Ivanhoe Service is as efficient as Ivanhoe fixtures. There is an Ivanhoe distributor conveniently near you ready to meet your needs with promptness and dispatch. If you don't know the name of your Ivanhoe distributor, write or wire and we will send you his address.

Ivanhoe Division of THE MILLER COMPANY, Meriden, Conn.

IVANHOE

**YOURS
for the
ASKING**



This Business Building Folder

How the electrical contractor can get more jobs—and more out of each job—is the subject of this interesting piece of literature.

Prepared and printed for you, by the American Steel & Wire Company, it is filled with valuable sales suggestions, that, if followed, will keep you busy constantly.

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“Do you appreciate **FA** Selling Service?”

Along with the job of building the most advanced, practical panelboards we consider it our job to co-operate with contractors to make better wiring jobs. **FA** men know practical wiring and are located near you to help with all panelboard and switch-board problems.

Right-price-first estimates,

experience and willingness in co-operation, speed in delivery by many stock carrying locations, construction shops for special work in your section of the country, together with a no-maintenance, standardized product at prices reasonable enough to get the business makes **FA** a name to tie to for success.



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Ralph E. Jones,
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Remember **FA** Panelboards are the Sign of a Better Job

Train an APPLETON Floodlight on this Floodlight Situation!



... 200 different uses for this type of outdoor lighting.

... 5 reasons why it is easier to sell APPLETON Floodlights for any and all of them.

HERE is a rich field constantly growing richer . . . and a bright light that offers any electrical contractor bright prospects for really big profits.

We have listed some 200 uses for floodlighting . . . railroad crossings, filling stations, amusement parks, to name but a few . . . with the trend towards night sport events showing clearly that the list is not yet closed!

You will find Appleton Floodlights (formerly National Floodlights) easier to sell. There are five logical reasons. Easy to install. Simple and sturdy in construction. Fitting any kind of surface. More attractive in appearance. And fully guaranteed . . . even the reflector.

Write today for the information and sales helps we have prepared for you. Then go out and cash in on this nation-wide, fast-growing demand for outdoor lighting.

APPLETON ELECTRIC COMPANY

1704 Wellington Ave., Chicago, U. S. A.

New York—150 Varick St.
Los Angeles—340 Azusa St.

San Francisco—655 Minna St.
Seattle—628 Railroad Ave.

APPLETON FLOODLIGHTS

TURN NIGHT INTO DAY



Interior Floodlight

The Appleton Interior Floodlight meets all requirements for interior floodlighting. The design of the unit reflector and shell produces a concentrated center beam with a soft outer flood ray. The lamp is scientifically ventilated to avoid over heating hazards and damage. It is equipped with all position mounting and bracket and ten feet of heavy duty cord with attaching plug. The finish is satin silver. Six color screens with wrinkle proof mounting frame are furnished, in blue, red, green, amber, purple and orange.

APPLETON ELECTRIC COMPANY
1704 Wellington Avenue, Chicago

Gentlemen:

Send us descriptive literature on Appleton Floodlights.

Name.....

Address.....

City..... State.....

Size	3/4"	3/4"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Without Locknut.....	\$.05	\$.11	\$.14	\$.15	\$.20	\$.30	\$.45	\$.85
With Locknut.....	.09	.15	.18	.24	.30	.45	.77	1.15

Socket Rushings

Black Composition.....	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
For Sockets.....	\$.02	\$.02	\$.04	\$.04	\$.08	\$.08

BOXES, FLOOR

NON-ADJUSTABLE TYPE

NON-ADJUSTABLE TYPE					
"Fullman" Steel City Co.	"Latman" Fullman Co.	Russell sell Mfg. Stall	Description		Price
477	110	2580	Comp. Out. with Std. Rec. & Bell Nozzle	\$4.00	
490	100	2590	" " Less Std. Rec. with Stem Nozzle	3.50	
490	100	2590	Comp. Out. Less Std. Rec. less nozzle	2.40	
491	.....	.....	Comp. Out. with 10A. Polarz. Rec. & Bell Noz.	4.90	
499	300	.....	Midget Out. with 10A. Recept. No Nozzle	2.25	
499	.....	.....	Square Out. Less Recept. with Bell Nozzle	4.30	
498	.....	.....	Square Out. With 15 Amp. Rec. & Bell Nozzle	5.40	
497	.....	.....	Sq. Out. With 25 A. Rec. & Large Bell Nozzle	8.30	

ADJUSTABLE TYPE

400	120	2502	Complete-Shallow Box—Less Receptacle	\$4.30
400	....	....	Complete-Deep Box—Less Receptacle	5.25
401	130	....	Complete-Shallow Box With Receptacle	5.35
401	....	....	Complete-Deep Box With Receptacle	6.30
420	....	....	Complete Large Size Box Without Receptacle	4.90
421	....	....	Complete Large Size Box With Receptacle	5.95

ADJUSTABLE GANG TYPE

441	251	2511	Single Gang Less Recept. with $\frac{1}{2}$ " Cover Plate	\$ 5.35
442	252	2512	Two " " " " " "	10.75
443	253	2513	Three " " " " " "	16.10
444	254	2514	Four " " " " " "	21.45
445	....	2515	Five " " " " " "	26.90

G. E. & T & B BOXES

C. E.	T & B	Description	
8006	8006	Utility Outlet Box.....	\$.90
8200	1700	Two Wire Floor Box.....	4.00
8220-40	1701	Three Wire Floor Box.....	5.00
8300	1200	Special Outlet Extension Type.....	2.60
8400		Master 2 Wire Plug Outlet.....	5.60
8420-40		Master 3 Wire Plug Outlet.....	6.50
		Complete—Cover, Nozzle, Plug and Receptacle.....	4.00
	1100	Complete—Cover, Nozzle, Plug and Receptacle.....	\$ 2.25

BOXES, CUTOUT

TYPE "A" STEEL SURFACE CUTOUT BOXES

Black

Width Length.				Width Length					
Short	Long	3"	4"	6"	Short	Long	3"	4"	6"
Side	Side	Deep	Deep	Deep	Side	Side	Deep	Deep	Deep
4½	5	\$.55	.....	.....	12	30	.....	\$10.75	\$12.40
4½	9	.65	.....	.....	15	15	.....	2.75	4.15
4½	9	3½"	.65	.....	15	18	.....	3.00	4.75
6	6	.65	.....	\$1.20	15	24	.....	5.75	6.50
6	6	1.00	.95	1.40	15	30	.....	13.35	15.50
6	9	.85	1.50	1.80	18	18	.....	7.75	5.00
6	12	1.35	1.10	1.95	18	21	.....	10.65	12.50
8	8	1.35	1.05	1.70	18	24	.....	12.20	13.00
8	10	1.45	1.20	2.00	18	30	.....	15.20	15.40
8	12	1.80	1.40	2.25	18	36	.....	17.80	19.40
9	9	1.15	1.80	2.30	18	40	.....	19.50	21.80
10	10	1.40	1.15	2.60	24	24	.....	14.00	15.00
10	10	1.70	1.40	2.35	24	30	.....	19.10	20.80
10	12	1.95	1.70	2.65	24	36	.....	22.35	23.75
10	15	2.35	1.85	3.10	24	40	.....	24.30	26.60
10	18	2.70	3.00	3.60	24	44	.....	41.35	45.30
12	12	2.25	1.80	3.00	30	30	.....	27.20	29.65
12	15	2.40	2.10	3.50	30	36	.....	41.55	47.40
12	18	2.50	2.40	4.00	30	42	.....	48.00	53.00
12	24	.....	4.40	5.40	30	48	.....	56.70	61.30

For Galvanized Boxes Add 50% to above prices.

BELLS & BUZZERS

Ansonia

Name	No.	Description	Buzzer	2 1/4" Bell	3" Bell	4" Bell	Cow or Sleigh
Ansonia	656	Sgle. Coil Non Adjust.	\$.40	\$.45	.....	.....	.....
Ansonia	657	Dbie. Coil Non Adjust.	.50	.55	.....	.....	.....
Ansonia	652	Dbie. Coil Round Non Adjust.	.55	.60	.....	.....	.....
Wizard	659	Dbie. Coil Non Adjust.	.90	.95	.....	.....	.....
Eureka	641	Dbie. Coil Adjust. Class B.	.....	.....	.....	.....	.....
Acme	631	Dbie. Coil Adjust. Class	.95	1.00	\$1.25	\$1.00	\$1.80
		A.	.....	.....	.....	.....	.....
Eureka	621	Dbie. Wood Box Bell	1.35	1.40	1.50	1.80	2.10
Monitor	658	Round Type	1.20	1.35	1.40	1.65	1.85
Monitor	661	Round Type	.....	1.50	.....	.....	.....
Wizard	660	Comb. Bell & Buzzer	.....	1.50	.....	.....	.....
Wizard	655	Buzzer Oak Mat	1.25	1.25	1.35	.....	.....
Wizard	666	Watch Case Buzzer Round	1.25	.....	.....	.....	.....
Ansonia	663	Comb. Bell & Buzzer	1.00	1.00	1.10	.....	.....

BELLS AND BUZZERS—Continued

Edwards

Name	No.	Size	Description	Enam.	Bell	Price
Nubel	738	2 3/4"	Two Coil Non-Adjust.-Gray Enam.	Buzzer		.65
"	739	"	" " " " " "	"		.60
Dixie	720	2 3/4"	" " Class C-Non-Adjust. Bell		Buzzer	.90
"	725	"	" " " " " "		"	.90
Cambell	737	2 3/4"	Two Coil Non-Adjust.-Gray Enam. Bell & Buzzer			1.15
Tubell	738	"	Double Coil Non-Adjust.-Gray Enam.	Two Bells		1.00
Cadet	710	2 3/4"	Two Coil-Class B-Adjust. Bell			.95
"	715	"	" " " " " "	Buzzer		1.25
"	712	3"	" " " " " "	Bell		1.60
"	714	4"	" " " " " "	Bell		1.80
Buz-A-Bell	730	2 3/4"	Two Coil-Class C Comb. Bell & Buzzer			1.20
Monitor	156	3"	Monitor Bell-Nickel Plated Gray			1.50
Bronz	156	1 3/4"	Nickel Watch Case Buzzer			1.25

No. 13 Bells

Edwards—Lungen

Size	Price
1 1/2"	\$2.50
2 1/2"	1.50
3 1/2"	1.90
4 1/2"	2.00
5 1/2"	2.20
6 1/2"	0.50
Cow or Sleigh	2.25

No. 15 Buzzers

Size	No.	Price
1 1/4" x 1 1/4"	No. 0.....	\$1.85
2 1/4" x 1 1/4"	No. 1.....	1.60
2 3/4" x 1 1/4"	No. 2.....	1.70
3" x 2"	No. 3.....	2.00
3 1/4" x 2 1/4"	No. 4.....	2.20

Partrick & Wilkins

Iron Box Bells

Small 2½" Iron Box Bell Non-Adjust. Dble. Magnet.....	\$.75
Fancy Gong Cow or Sleigh Non-Adjust. Dble. Magnet.....	1.65
King Monitor Bell	1.65
6" Large Iron Box Bell for Battery Current.....	7.30
8" <u>"</u> <u>"</u> <u>"</u> <u>"</u> <u>"</u>	10.50

Buzzers

Small Iron Box Buzzer Non-Adjust. Dble. Magnet	\$.75
Watch Case Buzzer Nickleled.	1.10
Midget Buzzer Nickleled.	1.65
Wood Box Buzzer.	2.15
Flush Buzzer with Flush Plate.	3.35

Wood Box Bells

Regular Type	Wool Dress Belts	Large Type	
214 ⁶ Regular.....	\$ 2.20	6 ⁶ Regular.....	\$ 6.55
3 ⁶ ".....	2.30	8 ⁶ ".....	8.00
4 ⁶ ".....	2.60	10 ⁶ ".....	13.10
Standard Cow or Dinner...	3.10	5 ⁶ Dinner.....	11.25
3 ⁶ Dinner.....	5.15	6 ⁶ ".....	13.05
4 ⁶ ".....	5.65	5 ⁶ Cow.....	13.75
4 ⁶ Cow.....	6.75	6 ⁶ ".....	16.00
	10.00		

Stanley & Patterson

Name	No.	Description	Buzzer	2 1/2" Bell	3" Bell
Competition	400-1	Dble. Coil Non-Adjust.	\$.60	\$.65	
Eclipse	200-3	" " " "	.90	.95	\$1.00
XXX	211-18	" " Adjust. B	.95	1.00	1.25
Marlo	221-29	" " " " A	1.65	1.70	1.85
Eclipse	202	Comb. Bell & Buzzer	1.25	1.25	.....
Competition	408	" " " "	1.00	1.00	.....
Midnet	331-34	All Nickleed Bell	1.50	1.80	.....
P. R.	240	Watch Case Buzzer	1.25		.....
P. R.	238	Monitor	.....		1.80

Name	N	Description	Bell	Cow or Sleigh
Competition	400-1	Dble. Coil Non-Adjust.....	\$1.20	
Eclipse	300-3	" " " " " " " " " " " "		
XXX	211-18	" " Adjustable B.	1.60	\$1.80
Midg.	221-29	" " " A.	2.25	2.60
Eclipse	208	Comb. Bell & Buzzr.		
Competition	402	" " " " " " " " " " " "		
Midget	331-3 ¹ / ₂	All Nickled Bell		
P. R.	240	Watch Case Buzzr.		
F	Mon8	" " " " " " " " " " " "		

Schwarze and Liberty

	Buzzer	2½"	3"	4"	Tes
Single Coil Bell No. 31 & 32....	\$.60	\$.65	\$.80	\$1.50	\$1.00
Two Coil Bell No. 311-321....	.55	.60	.65	.90	.....
Combination Bell & Buzzer No. 331-333.....	.90	.90	.....	.....	.....
Flush Two Buzzer No. 31S....	1.25	.....	.....	.....	.....

SKELETON BELLS

Any Make

	2 1/4"	3"	4"	5"	6"	8"	10"	12"
Faraday.....	\$5.70	\$6.00	\$7.00	\$9.40	\$10.60	\$16.00	\$25.00	\$31.00
Faraday Elka.	5.25	5.50	6.60	7.75	8.75	14.25	21.25	27.50

Push Buttons, Etc.

Brackets for Insulators

PUSH BUTTONS, TREADS, SPRINGS

STANDARD PUSH BUTTONS AND TREADS

Description	Ans.	Edw.	Fara.	P&W	Price
Round 1 1/4" and 1 3/4" Stamped Brass.....	606	603	SP51	29	\$0.25
Round 2 1/4" Stamped Brass.....	527	600	SP50	27	.25
Round 2 3/4" with Card Holder Brass.....	507	601	SP57	25	.40
Rectangular 4 1/2" x 1 1/2" S. B. Brass.....	604	SP54	55	.40	
Rectangular 3 1/4" x 1 1/4" S. B. Brass.....	605	SP53	50	.40	
Oval 2 1/4" x 1 1/4" S. B. Brass.....	606	SP55	30	.30	
Oval 4 1/2" x 2 1/4" S. B. Brass.....	609	SP56	45	.45	
Pear Push Buttons—Wood or Composition.....	505	67	5-9	3	.60
Pear Push Buttons—Metal, Nickel or Brass.....	65	MP5	85		
Desk Buttons—1/4" Hole—Nickel.....	562	59	7A	75	
Desk Buttons—1/4" Hole—Nickel.....	63			.65	
Desk Buttons—1/4" Hole—Nickel.....	D33	620	5A	.45	
High Voltage 1/4" Hole—110 Volts.....	85		855	2.40	
Table Clamp with Push Button.....	571	206	TC1	1.00	
Floor Pushes Combination Nickel.....	560	235	CFP2	.85	
Floor Treads—"Daisy" "Dixie".....	800	290	FT1	1.50	
Wood Push Buttons.....				.20	

COMPOSITION MOULDED PUSH BUTTONS

Round Plain 1 1/4" Diam.....	\$0.35	Rectangular Plain 1 1/4" x 3 1/4".....	\$0.45
Octagon Fancy 1 1/4" x 1 1/4" Diam. .40		Rectangular Fancy 1 1/4" x 3 1/4".....	.70
Oct. Card Holder 2 1/4" x 2 1/4" Diam. .60		Rec. Double Card Holder.....	.90

DESK PUSHES—COMPOUND

Make and Description	1	2	3	4	5	6
Edw. #146—Bakelite Block.....	\$2.10	\$2.50	\$3.20	\$3.65	\$4.50	\$5.25
Edw. #197 Less Cord Bake.Bl.	3.50	4.75	6.00	7.25	8.50	9.75
Edw. #197 with 6' Cord Bake.Bl.	4.05	6.10	7.75	9.45	11.15	12.85
Edw. #190 Wood—Less Cord..	4.00	5.35	6.60	8.10	9.40	10.80
Edw. #190 Wood with Cord....	4.45	6.65	8.35	10.30	12.05	13.90
Fara. #4C Wood Less Cord.....	2.00	2.30	2.60	3.05	3.50	3.90
Fara. #2A Wood Less Cord.....	4.90	7.00	8.50	10.60	12.40	13.80
Fara. B.D.P. Bake. Less Cord..	3.50	4.75	6.00	7.25	8.50	9.75
Fara. M.D.P. All Metal Less Cord	6.00	11.00	16.00	21.00		
P&W #4 Wood Less Cord.....	2.60	2.80	3.50	4.30	4.85	5.60
P&W #5 Wood Angle Less Cord				13.00		13.95
P&W #12 Wood Less Cord.....	3.30	4.25	5.45			6.00

DOOR AND WINDOW SPRINGS

Door Springs	Window Springs
Open Circuit Door Spring.....	Open Circuit Single.....
Closed Circuit Door Spring.....	Open Circuit Double.....
Open Circuit Make and Break...	Close Circuit Single.....
Open Circuit Door Trip.....	Open Circuit Transom.....

OTHER PUSH BUTTONS

Ansonia			
Round Stamped	Price	Round Cast	Price
514 1 1/4" Loose Back.....	\$0.30	511 1 1/4" Loose Back.....	\$0.90
515 2 1/4" Loose Back.....	.40	512 2 1/4" Loose Back.....	1.00
513 1 1/4" Loose Back.....	.95	508-10 2 1/4" Loose Back.....	1.00
579 1 1/4" Flush Push.....	1.00	540 2 1/4" Loose Back.....	.60
E33 1 1/4" Flush Push.....	1.00	550 2 1/4" Loose Back.....	.85
		570 2 1/4" Loose Back.....	.75

Other Ansonia Push Buttons, Etc.

F-33 Stamped Flush Push.....	\$0.70	545 Oblong 2 Gang for Cards.....	\$1.85
G-33 Stamped Diamond Push.....	.70	545 Oblong 3 Gang for Cards.....	2.65
521-524 Stamped Push.....	.75	545 Oblong 4 Gang for Cards.....	3.65
525-534 Stamped Push.....	.95	546 Oblong 1 Gang.....	1.65
536-537 Stamped Push.....	1.00	547 Oblong 2 Gang.....	1.50
538 Stamped Oblong Push.....	1.25	548 Oblong 1 Gang.....	.75
541 Oblong for Card.....	1.65	549 Oblong 1 Gang.....	1.20
543 Oblong 2 Point.....	1.25	577 Diamond Push.....	.70
544 Oblong for Card.....	1.20	578 Diamond Push.....	.75
Combination Floor Pushes Complete 573.....			2.50
Combination Floor Pushes Complete 575.....			2.65
700 1 Point Wood Base Switch.....			.45

Edwards

Round Desk Buttons	Oblong Push Buttons
621—1/4" Hole.....	602—2 Gang for Cards.....
622—1/4" Hole.....	607—Single for Cards.....
625—1/4" Hole.....	608—Single.....

Partrick & Wilkins

Round Push Buttons	
Stained Wood Push #2.....	\$0.15
Oak Wood Regular #1.....	.85
Oak Open, Closed and Dbl. Cont. #1.....	.65
Oak Triple Contact #1.....	.90
Cast Brass 1 1/4" Diam. #8.....	.70
Cast Brass 2 1/4" Diam. #9.....	.75

Oblong Pushes

16 Cast Brass 4 1/4" x 1 1/4" Screw Cap.....	\$1.55
31 Cast Brass 5 1/2" x 2 1/4" Screw Cap.....	2.30
44 Cast Brass 4 1/2" x 2 1/4" Screw Cap.....	1.40
708 Wrought Push and Sock 1 Pce.....	1.35
907 2 Button and Card Holder.....	2.15
908 3 Button and Card Holder.....	2.95
909 4 Button and Card Holder.....	4.55

OTHER PUSH BUTTONS—Continued

Partrick & Wilkins

Desk Push Buttons

Car Push 1 1/4" Hole Black Center.....	\$0.45
Multiple 1/4" Hole Black Center.....	1.35
Pony 1/4" Hole Black Center.....	1.85

Pear Shape Pushes

Compound Maple 2 Button.....	\$2.00
Compound Maple 3 Button.....	3.00
#4 Fancy Pear Two Piece.....	.25
Wood Rosettes for above.....	.40

MULTIPLE PUSH BUTTONS

Couch "Pushrites"

With Card Holders

Number of Buttons	Wood Base Type		Flush Brass Plate Type	
	Plain Base	Weighted Base	Number	Price
4	7900	\$ 3.35	7980	\$ 3.75
6	740	4.60	789	5.20
8	7910	5.80	7990	6.65
12	7921	8.30	79010	9.60
16	7930	10.80	79020	12.45
20	793	13.30	7902	15.40
			7940	17.50
			797	21.60

COUCH UNMOUNTED PUSH BUTTONS "WORKRITES"

No. 97 for 1/4" Hole.....	\$3.50
Adaptor No. 0684 for same.....	.05

BRACKETS FOR INSULATORS

WOOD BRACKETS

Each	Each
1 1/4" x 2" x 10".....	1 1/4" x 2" x 12".....
1 1/4" x 2" x 12".....	2" x 2 1/4" x 12".....
1 1/4" x 2 1/4" x 12".....	2" x 2 1/4" x 12".....
	2" x 3" x 12".....

PINS

Each	Each
Locust 1 1/4" x 8".....	Locust 1 1/4" x 9".....
Oak 1 1/4" x 8".....	Oak 1 1/4" x 9".....

HOUSE BRACKETS WITHOUT INSULATORS

Peirce

No.	Light Type	Price	No.	Heavy Type	Price	No.	Corner Type	Price
153	One	\$.25	154	One	\$.40	150	One	\$.30
253	Two	.55	254	Two	.80	242	Two	.55
353	Three	.90	354	Three	1.10	342	Three	.80

WIREHOLDERS WITH INSULATORS

Peirce

No.	Wires	Spacing	Price
1907	One	0	\$.25
190	"	0	.30
191	"	0	.55
296	Two	6	.55
299	"	9	.55
394	Three	4 1/2	.80
396	"	6	.85

HOUSE RACKS WITH INSULATORS

Peirce

No.	Wires	Length	Space	Price
183	1	6 1/2	0	\$.40
286	2	12 1/2	6	.80
383	3	12 1/2	3	.95
386	3	18 1/2	6	1.20

SECONDARY RACKS WITH INSULATORS

Peirce

No.	Light Type	Wires	Space	Price	No.	Heavy Type	Wires	Space	Price
276	2	6"	0	\$.90	278	2	8"	0	\$1.30
376	3	6"	0	1.30	378	3	8"	0	2.15
1276	2	6"	0	.85	1278	2	8"	0	1.20
1276	3	6"	0	1.20	1278	3	8"	0	1.85
2768	2	8"	0	.90					
3768	3	8"	0	1.30	1378	3	8"	0	2.00

INSULATORS ONLY FOR ABOVE BRACKETS

Peirce

355 Insulator.....	\$.18	1402 Insulator.....	\$.12
356 ".....	.25	1603 ".....	.10

HOUSE BRACKETS WITHOUT INSULATORS

National Elec. Products					
Light Type			Heavy Type		
No.	Points	Price Each	No.	Points	Price Each
108-10	1	\$.25	109-10	1	\$.45
108-26	2	..55	109-26	2	..80
108-29	2	.60	109-29	2	.85
108-36	3	.95	109-36	3	1.15

HOUSE RACKS WITH INSULATORS

National Elec. Products					
Light Type			Heavy Type		
No.	Points	Length	No.	Points	Length
104-10	1	5 1/4	101-24	2	9 1/4
104-26	2	11 1/4	101-28	2	13 1/4
104-33	3	11 1/4	101-34	3	13 1/4
104-36	3	18	101-38	3	21 1/4
104-53	5	18	101-44	4	17 1/4
104	Insulator Only	.12	101	Insulator Only	.18

WIREHOLDER ACCESSORIES

National Elec. Products			
No. 5000 Corner Chair	..13	No. 5040 Break Arm Strap	..14
No. 5020 Insulator	..18	No. 5051 " " Bolt	..20
No. 5021 U Bolts & Nuts	..10	No. 5052 T Head Screw	..03

SINGLE POINT SCREW BRACKETS

National Elec. Products			
No.	Points	Length	Each
5211	1	5 1/4	..20
5211L	1	5 1/4	..22
5213	2	5 1/4	..25
5213L	2	5 1/4	..28

WIREHOLDERS WITH INSULATORS

National Elec. Products			
For One Wire		For Two Wires	
No.	Each	No.	Each
No. 5011	..28	No. 5002	..60
No. 5001	..25	No. 5012	..65

WIREHOLDERS WITH INSULATORS

National Elec. Products					
Light Type			Heavy Type		
No.	Points	Length	No.	Points	Length
105-1X	1	6"	106-1	1	6"
105-10	1	4 1/4"	106-10	1	4 1/4"
105-26	2	10 1/4"	106-26	2	11 1/4"
105-29	2	13 1/4"	106-29	2	14 1/4"
105-34	3	13 1/4"	106-36	3	17 1/4"
105-36	3	16 1/4"	106-36X	3	17 1/4"
105	Insulator Only	.12	106	Insulator Only	.10

B-SUNDRIES, BOLTS, ETC.

CARRIAGE BOLTS

Galvanized					
Diam.		Length			
1/4"	Each	3"	4"	5"	6"
1/2"	Each	3"	4"	5"	6"

MACHINE BOLTS WITHOUT WASHERS

Galvanized					
Diam.		Length			
1/4"	Each	3"	4"	5"	6"
1/2"	Each	3"	4"	5"	6"

STOVE BOLTS

Round or Flat Head					
Diam.		Length			
1/4"	Each	3"	4"	5"	6"
1/2"	Each	3"	4"	5"	6"

TOGGLE BOLTS, STEEL

"Paine"					
Size—Diameter		Length			
1/4"	Long Price Each	3"	4"	5"	6"
1/2"	Long Price Each	3"	4"	5"	6"

NOTE: For Brass Toggle Bolts—2 1/2 times above prices.

ROUND FIXTURE BLOCKS

3" x 4" Round	4 x 5" Round	5 x 6" Round
\$.12	\$.15	\$.18

Ceiling Button—P & S Porcelain No. 170—Each..... \$.12
Switch Base—See Snap Switches Page PL-19.

CORDS, FIXTURE, LAMP AND HEATER

SINGLE FIXTURE CORD

Single Lamp Cord		Price Per Foot			
Type	No. 18	No. 16	No. 14	No. 12	
Single Cotton Covered Cord—Light	F-64	\$.01	\$.02	\$.02½	
Single Cotton Covered Cord—Heavy	F-32	\$.01½	\$.02	\$.03	
Single Artificial Silk Cord—Light...	F-64	\$.01½	\$.02½	\$.03	
Single Artificial Silk Cord—Heavy...	F-32	\$.01½	\$.03	\$.04	

DOUBLE LAMP CORD

Regular Lamp Cord		Price Per Foot			
	Type	No. 18	No. 16	No. 14	No. 12
Cotton Covered Twisted Pair.....	C	\$.02 1/2	\$.03	\$.05	\$.07
" " Parallel Pair.....	PO	.02 1/2	.04	.06	.....
" " Twisted Parallel Pair.	PD	.03	.05	.....	.....
Artificial Silk Twisted Pair.....	C	.02 1/2	.04	.06	.....
" " Parallel Pair.....	PO	.03	.05	.07	.....

REINFORCED CORD

Not Asbestos		Type	Price Per Foot			
			No. 18	No. 16	No. 14	No. 12
Cotton Covered	Light Type 1/4"	PS	\$.03	\$.04	\$.07	\$.12
"	Heavy " 1/4"	P	.04	.05	.07	.13
Weatherproof	Light Type 1/4"	PSWP	.03 1/2	.04	....	....
"	Heavy Type 1/4"	PWP	.04	.05	.07	....

HEAVY DUTY PORTABLE CORD

"Duracord" or Similar. Extra Reinforced					
		Price Per Foot			
Type	PS Light 2 Cond. Port. Cord..	No. 18 \$.08	No. 16	No. 14	No. 12
" P Heavy 2 " " " "		.11	\$.13	\$.17	\$.22
" P " 6 " " " "	14	.22	.36
					\$.30

ALL RUBBER CORD

"Tirex" "Royal" "Super" "Indestructo" or Similar						
		Price Per Foot				
		No. 18	No. 16	No. 14	No. 12	No. 10
SJ Junior 2 Conductor Black.....		\$.08	\$.10	.....	.....	.....
" " 2 " Green.....		.10	.13	.....	.....	.....
" " 2 " Black.....		.12	.15	.....	.....	.....
S Type Heavy 2 Conductor Black..		.12	.15	\$.19	\$.24	\$.30
" " 2 " " ".....		.14	.16	.20	.25	.30
" " 2 " " ".....		.16	.20	.29	.37	.45
" " 2 " Sgle. Cond. Black.....		.07	.08	.10	.11	.12

HEATER CORD

Asbestos Covered		Price Per Foot			
	No. 18	No. 17	No. 16	No. 14	No. 12
Stand. Twisted or Wound Asbest. 1/4"	\$.05	\$.05	\$.06	\$.08	\$.10
American Beauty Heater Cord Super					
Flexible	.....	.09	.....	.12	.20
Rockbestos Heater Cord	.07	.07 1/2	.08	.10	.20
Universal No. 9092 Super Flexible	.....	.07	.08		

MISCELLANEOUS CORD

Type	A	B	C	D	E
A Asbestos Braid overall Loco					
Cab Cord.....	\$.09		\$.10	\$.11	\$.12
" C Cotton Braid overall.....	.07	.08	.08	.10	.....
" D " " on ea. cond.....	.07	.09	.08	.10	.....
" E Cotton on ea. Cond. & over both.....	.08	.10	.09	.11	.....

NOTE—For Armored Cords See Page PL-9.
" Extension Cords See Page PL-10.
" Fixture Wire See Page PL-26 & 27.
" Bell Wire See Page PL-27.

NOTE—For Armored Cords See Page PL-9.
" Extension Cords See Page PL-10.
" Fixture Wire See Pages PL-26 & 27.
" Bell Wire See Page PL-27.

CONDUCTING BELL CORD

Spun Silk		Price Per Foot			
Description	Type	No. 18	No. 16	No. 14	No. 12
x Brewery Cord	CB	\$.03	\$.04	\$.06	..
x Canvasite Cord	CC	\$.04 1/2	\$.05	\$.07	..
x Deck Cable	PKWP	\$.05	\$.06	\$.08	..
x Stage & Theatre Cable	T	\$.05	\$.06	\$.08	..

x Note—These prices are based on less than coil lot trade prices.

CONDUCTING BELL CORD

Spun Silk		Price Per Foot			
Number of Conductors	2	3	4	5	10
Cond. Cond. Cond. Cond. Cond. Cond.	\$.08	\$.18	\$.20	\$.21	\$.28

NOTE—For Armored Lamp Cord See Page PL-9.

Electrical Contracting, October, 1930

CONDUIT, ELBOWS, COUPLINGS, BUSHINGS, ETC.

RIGID CONDUIT

	Black Per Foot	Galvd. Per Foot	Cutting & Threading Per Thread	Cutting Only Per Cut
1/4"	\$.10	\$.11	\$.20	\$.10
3/8"	.12	.13	.20	.10
1/2"	.17	.19	.25	.10
3/4"	.25	.27	.30	.15
1"	.30	.32	.35	.15
1 1/4"	.40	.43	.40	.20
1 1/2"	.60	.63	.50	.30
2"	.80	.88	.60	.30
2 1/2"	1.02	1.10	.70	.30
3"	1.25	1.35	.80	.30

THIN WALL CONDUIT

	3/4"	1"	1 1/2"
Threadless Thin Wall Conduit, Per Foot.....	\$.09	\$.12	\$.16
Adaptor, Each.....	.08	.12	.20
Coupling or Connector, Each.....	.22	.30	.40

Note—One Coupling with Bushings is Included with Each 10 Foot Length of Conduit.

**ELBOWS OR BENDS, COUPLINGS, OR UNIONS,
BUSHINGS, LOCKNUTS, REDUCERS**
Price Each

Size Each	Bends or Elbows		Couplings		Bushings		Locknut		Erickson Coupl. or Unions	
	Black Galv.	Galv.	Black Galv.	Galv.	Galv.	Galv.	Galv.	Galv.	Galv.	Reducers
1 1/2"	\$.16	\$.10	\$.10	\$.11	\$.02	\$.01	\$.40			\$.21
1"	.21	.24	.14	.15	.02 1/2	.01 1/2	.55			.21
1 1/4"	.32	.37	.18	.20	.05	.02 1/2	.75			.28
1 3/4"	.41	.46	.24	.26	.08	.05	1.20			.42
2"	.54	.62	.30	.32	.10	.08	1.66			.56
2 1/2"	.88	1.00	.40	.43	.20	.11	3.25			.70
3"	1.45	1.65	.55	.62	.30	.19	6.40			1.30
3 1/2"	3.70	4.25	.74	.81	.40	.32	9.75			1.76
4"	8.10	8.50	1.00	1.10	.88	.40	2.60			3.58
	0.40	10.75	1.25	1.35	1.40	.58	.....			.....

Also on Page PL-10.

Also on Page PL-5.

Also on Page PL-12.

FLEXIBLE METALLIC CONDUIT
"Greenfield", "Flexsteel", or Equivalent

	1/8"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Single Strip Per Foot....	\$.00	\$.12	\$.14	\$.19	\$.40	\$.45	\$.64	\$.79
Double Strip Per Foot....	.11	.14	.17	.23	.42	.50	.71	.89

For Fittings for Metallic Conduit See Page PL-14.
 For Non-Metallic Conduit or Loom See Page PL-15.
 For Steel Armored Cable & Lead Covered See Next Item.

CABLE, ARMORED & NON-METALLIC SHEATHED

ARMORED CABLE, "BX", "ABC", "FLEXSTEEL", OR
SIMILAR

		Price Per Foot		
		No. 14	No. 12	No. 10
TWO	Solid		\$.05	\$.00
CONDUCTOR	Stranded			\$.13
THREE	Solid		.09	.12
CONDUCTOR	Stranded		..	..
FOUR			..	..
CONDUCTOR	Solid		.20	.25
ONE	Solid		.11	.12
CONDUCTOR	Stranded		..	.14
OVALFLEX	2 Conductor		.07	.11
	3 Conductor		.10	.14

		Price Per Foot		
		No. 8	No. 6	No. 4
TWO	Solid			
CONDUCTOR	Stranded		\$.20	\$.29
THREE	Solid		.25	..
CONDUCTOR	Stranded		.26	.35
FOUR			..	.60
CONDUCTOR	Solid		..	..
ONE	Solid		.14	.17
CONDUCTOR	Stranded		.15	.18
OVALFLEX	2 Conductor		..	..
	3 Conductor		..	..

Double Strip Armored Cable add 30% to above prices.	
Anti-Short Fibre Bushings for ABC Cable, Each.....	\$.01
Clips or Staples 3/4" for Armored or Non-Metallic Cable, Each.....	.01

"ABC" LEAD COVERED ARMORED CABLE

				Price Per Foot
				No. 14 No. 12 No. 10
Single Conductor	Solid Lead	Covered		\$.13
	Stranded	"	"	"
Two Conductor	Solid	"	"	.30 .24 .20
	Stranded	"	"	"
Three	Solid	"	"	.27 .23 .20
	Stranded	"	"	"

			Price Per Foot		
			No. 8	No. 6	No. 4
Single Conductor Solid Lead	Covered	.....		
Two " " Stranded	" " " " " " " "	.....	\$ .20	\$.37	.....
Three " " Solid	" " " " " " " "	.....	.42	.58	.....
Three " " Stranded	" " " " " " " "	.....	.88	.90	\$ 1.10

"ABC" ARMORED LAMP CORD

	Per Foot		
Single Strip	No. 18	No. 16	No. 14
Plain Armored Lamp Cord, Two Conductor.....	\$.13	\$.14	\$.19
Add 30% for Double Strip			

NON-METALLIC SHEATHED CABLE
"Romex", "Loomwire", "Wireflex", or similar

(With or Without Ground Wire)	#14	#12	#10	#8	#6	#4
Wire 2 Conductor per Foot.....	\$0.05	\$0.06	\$0.09	\$0.13	\$0.19	\$0.25
Wire 3 Conductor per Foot.....	.08	.10	.13	.20	.27	.38
Fitting-Straps Each.....	.01	.01	.01	.01	.01	.01
Fitting-Clips Each.....	.03	.03	.03	.....	.....	.....
Fitting-Connectors Each.....	.10	.10	.20	.20	.30	.55

CUTOUTS OR FUSE BLOCKS

PLUG CUTOUPS

30 Amp. Porcelain

Description	Price
Single Pole—Main Line.....	\$2560
Double " ".....	3225
Triple " ".....	3296
Double Pole Single Branch.....	3216
" " Double ".....	3316
" " Single or Double Cross Branch.....	3257
Triple to D. P. Double Branch.....	8030
Triple Pole Single Branch.....	6219
" " Double.....	8029
	8213

DEAD FRONT CUTOUT BASES

Plug Type—30 Amp.

BRYANT				With Short Cover		With Long Cover			
				Numbers	Price	Numbers	Price		
Dble. Pole	Sigle Branch	.....		71935	or 71035		\$.95	
	Dble.	.....		72587	or 72087	82587	or 82087 \$1.55	
Trip.to Dble.	Pole Dble.	Branch		72199	or 72099	82199	or 82099 1.75		
G. E. or TRUMBULL									
				G.E.	Covers	Trumbull	Price		
				G.E.		G.E.	Cov.		
3	Wire	Single	Branch—2	Circuit.	2440	3109	\$1.35	2438	\$.70
3	"	Double	"—4		2440	4199	2.00	2441	1.00

ENCLOSED CARTRIDGE CUTOUTS OR BASES

Porcelain Base, 250 Volts

Potential Name, 250 Volt	Amp.	Amp.	Amp.
Single Pole Main Line Enclosed Porcelain.....	.45	.75	\$1.55
Double " " " "	1.65	1.65	3.10
Triple " " " "	.90	2.20	4.65
Double Pole Single Branch Porcelain.....	.80	2.00	.....
" Double " " " "	1.45	3.85	.....
Triple to Double Pole Double Branch Porcelain ..	1.65	4.65	.....
Triple Pole Single Branch Porcelain.....	1.60	3.30	.....
Triple Pole Double Branch Porcelain.....	2.50	.....	.....
Single Pole Main Line Cutout Base 600 Volt.....	.85	1.00	1.75

SLATE BASE

250 Volt	600 Volt	30 A.	60A.	100A.	200A.	400A.	600A.
Single Pole-Slate	Base-250 V.	\$.55	\$.80	\$ 1.75	\$ 2.85	\$ 6.95	\$ 9.50
"	" 600 V. ....	.80	1.15	2.00	3.15	7.90	10.25

Prices on cutouts do not include fuses

C-SUNDRIES

GROUND CLAMPS

Standard Adjustable Ground Clamps, any make	No. 3		No. 4		No. 5		No. 6	
	1/2 to 1"	1 1/2 to 2"	1/2 to 1"	1 1/2 to 2"	1/2 to 1"	1 1/2 to 2"	1/2 to 1"	1 1/2 to 2"
Blackburn.....	\$.24	\$.28	\$.24	\$.28	\$.35	\$.35	\$.45	\$.45
B & J								
Other Types	1/2"	3/4"	1"	1 1/4"	1 3/4"	2"	2 1/4"	3"
Chase Shawmut 3660-65	\$.25	\$.30	\$.35	\$.45	\$.50	\$.60	\$.65	\$.70
G. V. A Series 5000.....	\$.25	\$.30	\$.35	\$.45	\$.50	\$.60	\$.65	\$.70

STRAPS, CLIPS OR CLAMPS

For Pipe, Without Screws

	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Galvnd. Straps, 2 Hole Per Pound.....	\$.01	\$.01	\$.01	\$.02	\$.02	\$.04	\$.05
No. Straps per Pound.....	45	40	25	20	13	12	7
Light Steel Straps, 1 Hole	.04	.05	.06	.08			
Mall. Iron Clamps, 1 Hole	.06	.07	.08	.11	.18	.25	.45
P & S Conduit Clamps With Bolts-Size 1400						.60	.80
			.10	.14	.20	.25	

(See Also Page PL-25)

COLORING & FROSTING LIQUID

	7 ounce Cans	18 ounce Cans	30 ounce Cans	$\frac{1}{4}$ Pint Bottle	1 Pint Bottle	Quart Bottle
Crescent (McGill).....				\$1.25	\$2.50	\$5.00
Cefco.....	\$2.50	\$4.00	\$7.50			
Fraco.....				1.25	2.25	4.00
Permacolor.....				1.05	3.00	5.00
Clips for Loom.....						
Crowfoot.....				$\frac{1}{16}, \frac{1}{8}, \frac{1}{4}$	\$.06 Each	2c Each or 3 for 5c $\frac{1}{16}, \frac{1}{8}, \frac{1}{4}$.10 Each

CORD & WIRE CONNECTORS

SMALL FIXTURE & WIRE CONNECTORS

Solderless
Insulated Solderless Wire or Fixture Connectors Similar to "Simplex"
"Wirenuts" "Mar" "No Torch" "Wirelets" "Ideal" "Wiremold" Etc.—each
Non-Insulated Solderless Wire Connectors—2 Screw—All Metal..... \$.10

SET SCREW CONNECTORS

		Round Brass				
		No. 12-14	No. 10	No. 8	No. 6	No. 4
Divided Wall—2 Screws.....	Wire Size	\$.06	\$.08	\$.09	\$.10	\$.14
Hole Thru " 4 ".....	"	.11	.16	.12	.13	.18
Hole Thru " 2 ".....	"	.11	.13	.15	.17	.20
		No. 2	No. 1/0	No. 2/0	No. 3/0	No. 4/0
Divided Wall—2 Screws.....	Wire Size	\$.15	\$.20	\$.22	\$.24	\$.30
Hole Thru " 4 ".....	"	.20	.24	.26	.28	.35
Hole Thru " 2 ".....	"	.22	.28	.30	.35	.45

SOLDERLESS CONNECTORS

Dessert or Penn-Union

		No. 3 to 1	No. 1/0	No. 2/0	No. 3/0	No. 4/0	No. 250,000	No. 300,000	No. 400,000	No. 500,000
Size Cond.....		\$.75	\$.80	\$.85	\$.90	\$.95	\$ 1.00	\$ 1.10	\$ 1.20	\$ 1.30
2 Way L's.....		1.05	1.20	1.40	1.75	2.10	2.40	2.85	3.75	4.65
Cable Taps.....		1.05	1.20	1.40	1.75	2.10	2.40	2.85	3.75	4.65
3 Ways & Y's.....		.55	.60	.70	.90	1.10	1.20	1.40	1.85	2.40
Lugs FB Ang.....		.55	.60	.70	.90	1.10	1.20	1.40	1.85	2.40

CORD & MOTOR CONNECTORS

		Complete		Body Only		Cap Only	
		No.	Price	No.	Price	No.	Price
Arrow							
Midget Comp.	8238		.75				
Arrotex	8239		.75				
Motor Conn.							
"	RP-8221	.55		8221	.45	RP	\$.12
"	RL-8221	.60		8221	.45	RL	.20
"	RA-8222	.55		8222	.45	RA	.13
"	RM-8222	.65		8222	.45	RM	.25
"	TM-8222	.70		8222	.45	TM	.25
"	RH-8224	.90		8224	.60	RH	.35
"	RG-8281	.90		8281	.60	RG	.35
"	8334 & 35	.90					
Bryant							
Motor Midget	KR-130	.60		130	.45	KR	.20
" Conn.	KG-103	.70		103	.45	KG	.25
"	KT-130	.65		130	.45	KT	.15
GE							
Cord Connector	1346-1347	.90		1647	.45	6146	.50
Hubbell							
Cord Connector	5894	.80		5574	.55	5896	.30
"	6116	.70		6118	.55	5964	.15
"	6179	.75		6630	.55	6631	.20
"	6180	.65		6630	.55	6181	.10
"	5518	.90		5574	.55	5420	.25
"	7083	1.35		7084	.85	7056	.35
"	7090	1.80		7091	1.10	7092	.75
"	6408	1.25		6409	.85	6149	.45
Weber							
Cord Connector	2274	.60		.74	.45	2200	.20
Wirt							
Cord Connector	.56	.55					

NOTE: For Attachment Plugs and other caps—See Pages PL-16 & PL-17

E-SUNDRIES

EXTENSION CORDS—MADE UP

With Plug & Socket, but Guards-Lamps & Handles Extra

		With Lamp Cord and Key Socket		With Reinforced Cord and Key Socket		With Artificial Silk Cord and Key Socket	
		No. 18	No. 16	No. 18	No. 16	No. 18	No. 16
Length in Feet							
4 Foot.....	Twisted	\$.75	\$.80	\$.85	\$.80	\$.85	\$.85
6 ".....		.80	.90	.95	.90	.95	.95
8 ".....		.85	1.00	1.05	1.00	1.05	1.05
10 ".....		.90	1.10	1.20	1.10	1.20	1.20
12 ".....		.95	1.20	1.30	1.20	1.30	1.30
14 ".....		1.00	1.30	1.45	1.30	1.45	1.45
16 ".....		1.05	1.40	1.55	1.40	1.55	1.55
18 ".....		1.10	1.50	1.65	1.50	1.65	1.65
20 ".....		1.15	1.60	1.75	1.60	1.75	1.75
22 ".....		1.20	1.65	1.85	1.65	1.85	1.85
24 ".....		1.25	1.75	1.95	1.75	1.95	1.95
Length in Feet		With All Rubber Cord and Weatherproof Socket					
		Light		Heavy			
		No. 18	No. 16	No. 18	No. 16		
4 Foot.....		\$1.00	\$1.10	\$1.15	\$1.25		
6 ".....		1.20	1.30	1.40	1.50		
8 ".....		1.35	1.50	1.65	1.75		
10 ".....		1.50	1.70	1.90	2.00		
12 ".....		1.75	1.90	2.15	2.25		
14 ".....		1.90	2.10	2.40	2.50		
16 ".....		2.10	2.30	2.65	2.75		
18 ".....		2.25	2.50	2.90	3.00		
20 ".....		2.40	2.70	3.15	3.25		
22 ".....		2.65	2.90	3.40	3.50		
24 ".....		2.80	3.10	3.65	3.75		

ELBOWS & BENDS

For Rigid Conduit

		Size	2"	3"	3 1/2"	4"
Black.....			\$.88	\$1.45	\$3.70	\$8.10
Galv.....			1.00	1.65	4.25	9.30
						10.75

EXPANSION SHIELDS & ANCHORS

(Ackerman-Johnson-Dryvin-Star-Diamond-Packtite or Similar)

		Screws Not Included.		Screws Included.	
		Price		Price	
Expansive Screw Anchors or Caulking		Size of Shield		Size of Shield	
Anchors for Machi e Screws or Bolts.		Price		Price	
Size Screw or Bolt		Shield		Shield	
6-32 Screw.....		\$.06	1/4" x 1 1/4"		\$.05
8-32 ".....		.07	1/4" x 1"		.06
10-24 ".....		.08	1/4" x 1 1/4"		.07
12-24 ".....		.10	1/4" x 1 1/4"		.08
1-4x20 Bolt.....		.12	1/4" x 1 1/4"		.09
5-16x18 ".....		.15	1/4" x 1 1/4"		.10
3-8x16 ".....		.18	1/4" x 1 1/4"		.12
7-16x14 ".....		.20	1/4" x 1 1/4"		.14
1-2x13 ".....		.20	1/4" x 1 1/4"		.16
5-8x13 ".....		.30	1/4" x 1 1/4"		.22
			1/4" x 3 1/2"		.25

Multi-Size Screw Anchors

		Screw Size			
Length of Anchor.....		5 to 10	8 to 14	16 to 20	16 to 20
Price Without Screw.....		\$.04	\$.05	\$.06	\$.08

LAG SCREW ANCHORS (Diamond or Similar)

		3/4"	1"	1 1/4"	1 1/2"
Takes Lag Screw.....		\$.15	\$.15	\$.25	\$.35
Price Without Lag Screw.....		.40	.60	.90	1.00

FUSES

PLUG FUSES

Standard Plug Fuses—Any Make—\$.07 each or 5 for \$.25
(Some Manufacturers put these fuses up 4 in a box, in which case they should be retailed at 4 for \$.25.)

ENCLOSED FUSES, NON-RENEWABLE

		Non-Indicating		Indicating	
		Price Each		Price Each	
Amps.		250 Volts	600 Volts	250 Volts	600 Volts
1 to 30.....	Fuse	\$.10	\$.30	\$.20	\$.40
35 to 60.....	Fuse	.20	.40	.35	.65
70 to 100.....	Fuse	.60	1.10	.95	1.75
110 to 200.....	Fuse	1.20	1.85	1.85	2.90
225 to 400.....	Fuse	2.15	4.10	3.35	6.35
450 to 600.....	Fuse	4.10	6.00	6.35	9.25
650 to 800.....	Fuse	8.95	11.00	13.85	17.35

RENEWABLE FUSES

		Fuses		Links	
Amps.		250 Volts	600 Volts	250 Volts	600 Volts
1 to 30.....	Fuse	\$.50	\$ 1.10	\$.03	\$.05
35 to 60.....	Fuse	1.00	1.25	.05	.06
65 to 100.....	Fuse	2.00	3.00	.10	.10
110 to 200.....	Fuse	4.00	5.00	.15	.15
225 to 400.....	Fuse	7.50	11.00	.30	.30
450 to 600.....	Fuse	11.00	18.00	.60	.60

FUSE WIRE

		3/4"	1"	1 1/4"	1 1/2"
Size in Amps.....		\$65.00	\$6.00	\$2.50	\$2.20
Price Per Pound.....		.01	.01	.01	.01
Price Per Foot.....		.01	.01	.01	.01
Size in Amps.....		3	5	10	15
Price Per Pound.....		\$1.90	\$1.50	\$1.25	\$1.25
Price Per Foot.....		.01	.01	.02	.03
Size in Amps.....		20	25	30	40
Price Per Pound.....		\$1.00	\$1.00	\$1.00	\$1.00
Price Per Foot.....		.04	.05	.07	.08
Size in Amps.....		60	70	80	90
Price Per Pound.....		\$1.00	\$1.00	\$1.00	\$1.00
Price Per Foot.....		.15	.20	.21	.24

Fuse Strip Any Amperage....\$1.00 per lb.

OPEN LINK FUSES

Small Wire Type

		1 to 30	35 to 60	65 to 100
Size in Amps.....		Amps.	Amps.	Amps.
Numbers.....		00-0-1-2-3	2-3-5	5
Price Each.....		\$.10	\$.14	\$.20

Large Strip Type

		25-100	110-200	225-400
Size in Amps.....		7	7 to 15	10 to 15
Numbers.....		7	7	7
Price Each.....		\$.20	\$.30	\$.60
Size in Amps.....		425-600	600-800	800-1500
Numbers.....		10 to 16	28	40
Price Each.....		\$1.00	\$1.75	\$6.55

STAMPED SHEET METAL LINK FUSES

		B	C	D	E-F-H-I-L-M
Type of Link.....		1 1/2"	2 1/2"	3 1/2"	See Catalog
C to C Distance.....		1 1/2"	2 1/2"	3 1/2"	See Catalog
Price Each.....		\$.11	\$.11	\$.16	\$.30

Electrical Contracting, October, 1930

THREADED CONDUIT FITTINGS

STANDARD TYPES, COVERS EXTRA
"Condulets" "Taplets" "Unilets" "Electrolets" "V. V."
"Adaptilets" Etc.

	Form 7	3/8"	3/4"	1"	1 1/2"	1 3/4"
A		\$.33	\$.44	\$.60	\$.87	\$ 1.12
B		.40	.50	.70	1.75	2.10
C		.50	.67	.83	1.32	1.71
CO-COV		.70	.91	1.05	1.75	2.25
E		.40	.50	.70	1.12	1.46
F	Form 7	.70	1.12	1.75	3.08	4.46
LB-LF-LR-LBB		.56	.63	.91	1.47	1.96
LB-LB-LRB		.56	.63	.91	1.47	1.96
LBB-LRB-LW		.91	1.12	1.32	1.75	2.80
T All One Size		.67	.80	1.12	1.71	2.37
TA All One Size		.98	1.05	1.40	2.18	3.22
TB-TL-TR		.68	.81	1.12	1.71	2.38
U-UB		.68	.75	1.10	1.76	2.35
X All One Size		.84	1.09	1.47	1.96	2.28
Gaskets		.14	.14	.31	.28	.28
Reducers		.21	.21	.28	.42	.56
Connectors		.40	.42	.49	1.54	1.96
Unions		1.05	1.12	1.40	4.50	6.30

	Form 7	2"	2½"	3"	3½"	4"
A		\$2.32	\$5.46	\$ 6.50	\$10.60	\$11.70
B		3.65	5.46	7.30	9.10	16.65
C		3.40	6.24	8.10	11.70	14.30
CO-COV		4.45	6.24	10.27	16.35	17.95
E		3.00	5.45	6.50	10.60	11.70
F		For Special Form 6 Entrance Fittings See PL-13.				
Form 7		7.00	10.66	13.26	23.53	32.60
LB-LF-L-LR-L-LBB		3.50	6.50	8.45	13.65	15.60
LF-LB-L-LRB		3.50	6.50	8.45	13.65	15.60
LB-LB-L-LW		3.72	5.32	.....	.....	.....
T All One Size		3.58	6.50	9.75	14.30	16.90
TA All One Size		5.53	.....	.....	.....	.....
TB-TL-TR		3.58	6.50	9.75	14.30	16.90
U-UB		4.20	7.80	10.15	16.35	18.75
X All One Size		4.90	7.80	13.00	16.90	20.80
Gaskets		.35	.52	.52	.65	.65
Reducers		70	1.30	1.76	2.60	3.55
Connectors		3.01	.....	.....	.....	.....
Unions		8.10	.....	.....	.....	.....

COVERS

For Above

			\$ ¹ / ₈ "	\$ ³ / ₈ "	\$ ¹ / ₂ "	\$ ³ / ₄ "
Porcelain Covers with Holes.....			\$.14	\$.21	\$.35	\$.51
Composition " " .....			.28	.42	.70	1.40
		Blank.....	.42	.56	.84	1.54
Porcelain " " For Drop Cord.....			.49	.56	.....	.....
		Weatherproof.....	.22	.35	.....	.....
Metal Covers Blank Sheet Steel.....			.12	.16	.33	.45
" " " Cast Iron.....			.21	.31	.49	.70
" " " with ¹ / ₄ " Nipple.....			.28	.50	.54	.....
" " " " ³ / ₈" .....			.33	.40	.54	.....
" " " " ¹ / ₂" .....			.35	.42	.56	.....
Porcelain Covers with Holes.....			\$.67	\$.84	\$ 1.12	\$ 1.26
Composition " " .....			.85	1.08	.....	.....
		Blank.....	1.15	1.68	4.46	6.30
Porcelain " " For Drop Cord.....			.....	.....	.....	.....
		Weatherproof.....	.....	.....	.....	.....
Metal Covers Blank Sheet Steel.....			.63	.79	1.05	1.12
" " " Cast Iron.....			.98	1.26	1.61	1.78
" " " with ¹ / ₄ " Nipple.....			.....	.....	.....	.....
" " " " ³ / ₈" .....			.....	.....	.....	.....
" " " " ¹ / ₂" .....			.....	.....	.....	.....

RECEPTACLES & ROSETTES

For Above

Plug Receptacles	10 Amp.	2 Pole	250 Watt	$\frac{1}{2} \times$	$\frac{3}{4} \times$	1"
..	15	..	..	\$ .56	\$.63	\$.70
..	20	..	125	..	.63	.71
..	20	..	2	..	.77	.84
..	20	..	2	..	.84	..
..	20	..	3	..	..	.91
..	15	..	3	..	..	..
..	15	..	3	..	..	..
..	20	..	3	..	..	..
..	20	..	3	..	..	..
Lamp Receptacle	660 Watt	with Shade Holder	..	..	1.12	..
Cord Rosettes	..	..	..	..	.42	.49
..	..	..	..	..	.42	.49

FS SERIES FOR FLUSH DEVICES
Shallow Type Without Covers, Any Make

No. Gangs	No. Pipe Outlets	Series	3/4"	3/4"	1"
Single Gang	One	FS-FSA	\$.01	\$1.05	\$1.19
"	Two	FSC-FSL-FSR- FSLA-FSS-FSAA	1.05	1.26	1.54
"	Three	FSCA-FECC- FSCF-FST	1.40	1.75	2.03
"	Four	FSX-FSCD	1.68	2.10	2.38
Two Gangs	One	FS-FSA	1.88	1.82	1.96
"	Two	FS-FSS	1.82	2.17	2.17
"	Three	FSD	2.03	2.17	2.31

FS SERIES FOR FLUSH DEVICES—Continued

No. Gangs	No. Pipe Outlets	Series	3/4"	1/2"	1"
2 Gang Tandem	One	FS	\$2.81	\$2.45	\$2.50
"	Two	FSC	2.45	2.33	2.33
Three Gang	One	FS-FSA	.....	2.53	2.73
"	Two	FSC	.....	2.66	2.67
"	Four	FSD	2.73	3.01	3.23
Four Gang	One	FS-FSFA	.....	3.08	3.36
"	Two	FS-FSSFE	.....	3.39	3.50
"	Five	FSD	3.44	4.00	4.24

COVERS FOR FS FITTINGS

[illegible]

COMBINATION COVERS FOR FS SERIES

2	Gang for One Switch and one Sgle. or Duplex Receptacle.....	\$.70
2	" " Bull's Eye with Jewel	1.75
2	" " One lift cover Receptacle	1.08

NOTE: Although our prices on conduit fittings apply to all makes we use
Crouse Hinds' numbers and lists for convenience.

G & H WITHOUT ADJUSTABLE BAR

Type Crouse Hinds or Similar	5 Amp.			10 Amp.		
	$\frac{3}{4}"$	$\frac{1}{2}"$	1"	$\frac{3}{4}"$	$\frac{1}{2}"$	1"
G.....	\$.66	\$.70	\$1.05	\$.70	\$.91	\$1.19
GL.....	.63	.77	1.12	.77	.98	1.28
GA-GLA-GT.....	.84	.98	1.33	.98	1.19	1.80
GTA-GX-GXA.....	1.08	1.18	1.68	1.18	1.40	1.85
HA.....	.49	.56	.91	.56	.77	1.05
HA.....	.49	.63	.98	.63	.84	1.19
HH.....	.56	.70	1.05	.70	.91	1.19
HHC.....	.84	.98	1.33	.98	1.19	1.60
HLA.....	.63	.77	1.12	.77	.98	1.28

G & H WITH ADJUSTABLE BAR

Type Crouse Hinds or Similar	5 Amp.			10 Amp.		
	3/4"	1"	1 1/2"	3/4"	1"	1 1/2"
G.....	\$.77	\$.91	\$1.26	\$.91	\$1.12	\$1.40
GL.....	.84	.98	1.33	.98	1.19	1.50
GA-GLA-GT.....	1.05	1.19	1.54	1.19	1.19	1.63
GTA-GX.....	1.26	1.40	1.89	1.40	1.61	2.03
GXA.....	1.50	1.71	2.17	1.71	1.82	2.31
H.....	.63	.77	1.12	.77	.88	1.25
HA.....	.70	.84	1.19	.84	1.05	1.33
HGA.....	.77	.91	1.26	.91	1.12	1.40
HHC.....	1.05	1.19	1.54	1.19	1.40	1.63
HHA.....	.84	.98	1.33	.98	1.19	1.50

Type .

G.	Crouse Hinds or Similar	20 Amp.		
		3/4"	1"	1 1/4"
G.		\$1.98	\$1.33	\$1.04
GI		1.33	1.03	.96
GA-GLA-GT.		1.54	1.68	1.96
GTA-GX.		1.75	1.95	2.33
GXA.		1.98	2.34	2.82
H.		1.12	1.19	1.64
HA.		1.18	1.38	1.68
HA.		1.29	1.61	2.16
HHC		1.54	1.68	2.16
HIA		1.33	1.80	1.96

COVERS FOR G & H SERIES

Description	For G & H Fittings Without Adjustable Bar		For G & H Fittings With Adjustable Bar	
	5 Amp.	10 Amp.	20 Amp.	5 & 10 Amp.
Porcelain Cover with Wire Holes.....	.28	.35	.56	.21
Blank Sheet Steel cover.....	.28	.35	.14	.35
" " Cast " " .....	.35	.42	.56	.28
Sheet Steel with 1/2" Brass Nipple.....	.35	.42	.49	.28
" " 3/4" " " .....	.42	.49	.56	.35
" " 1" " " .....	.50	.56	.63	.42
" " 1 1/2" " " .....	.56	.63	.70	.50
Receptacle Covers No Shadeholder..	.70	.79		
" " With " "	1.12			

DEVICES FOR G & H SERIES

Lamp Receptacles one piece with or without Shadeholder Grooves.....	\$.31
" " two " without " "	.76
Cord Rosette Porcelain Composition.....	.54
	.76

Sterling Lighting Equipment

for Interior and Exterior

MINIATURE GOLF COURSES

THE great popularity of MINIATURE GOLF COURSES opens up a new, profitable, and most interesting field for increased sales of lighting equipment.

It should pay you well to investigate this profit-opportunity and particularly so if Sterling Equipment is recommended for each and every job.



No. 406

Distributing type Reflector designed for 300 or 500 Watt Lamps. Holder furnished.



No. 305

Concentrating type Reflector, for 150 and 200 Watt Type "C" Lamps. Holder furnished.



No. 256

Distributing type Reflector for 150 or 200 Watt Lamps. Holder furnished.



No. 4010

Flood-O-Lite Sr.

A master of interior flood-lights. Designed for use with 300 and 500 Watt Mazda "C" Lamps.



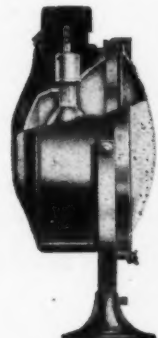
No. 3022

Flood-O-Lite Jr. Highly efficient interior floodlight for use with 200 Watt Mazda "C" Lamps.



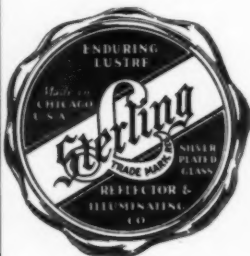
No. 3000

Exterior Flood-O-Lite for use with 250 and 400 Watt Type "C" G-30 Lamps. Beam spread 5 to 80 degrees.



No. 5240

Exterior Flood-O-Lite for use with 300 to 1000 Watt Type "C" PS Lamps. Beam spread 6 to 90 degrees.



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REPRESENTATIVES IN ALL PRINCIPAL CITIES

You may be able to sell unknown switches . . . but you are blamed if they fail « « «

BY working needlessly hard, you can "put across" safety switches and other wiring material of questionable reputation or unknown quality. But if they fail to perform satisfactorily "on the job" your reputation suffers.

Far better it is to play safe all around . . . to specify Safety Switches which are known to your prospect and therefore easy to sell . . . reputable, guaranteed switches . . . Cutler-Hammer Safety Switches.

As long as they are on the job, C-H Safety Switches are building satisfaction for you, an increased reputation and greater certainty of repeat business from

the same customer. Nor do all their superiorities lie in the better workmanship, superior materials and design.

The C-H Standard Duty Type C Switch, for example, is quick make and quick break, assuring reduced arcing, elimination of slow burning and fusing . . . greater life at less maintenance cost. Smaller in size, it takes up less space, yet is easier to install and wire.

Other C-H Safety and Meter Switches are carried by your wholesaler and are described in the C-H Safety Switch Catalog, a copy of which will be sent at your request.

CUTLER-HAMMER, Inc.

Pioneer Manufacturers of Electric Control Apparatus

1307 St. Paul Avenue • MILWAUKEE, WISCONSIN



Advantages of C-H "Standard Duty" Type C Switch
(Bulletin 4131)

Quick make and quick break prevent burning of contacts, give far longer life. Molded crack-proof base. Rugged, careful construction. Small case yet easy to wire. Removable handle to prevent tampering. Six sizes, from 30 to 400 amps. 250 and 600 volts.

Advantages of C-H Universal Meter Service Switches
(Bulletin 4311)

First standard device offering economical provision for branch circuits. Compact switch block combines enclosed sealed main fuse and exposed accessible branch fuses in one unit. One or two blade types for two or three wire installations. Circuit dead fuse type. Connections conveniently located.

Advantages of C-H General Duty Entrance Switch
(Bulletin 4141)

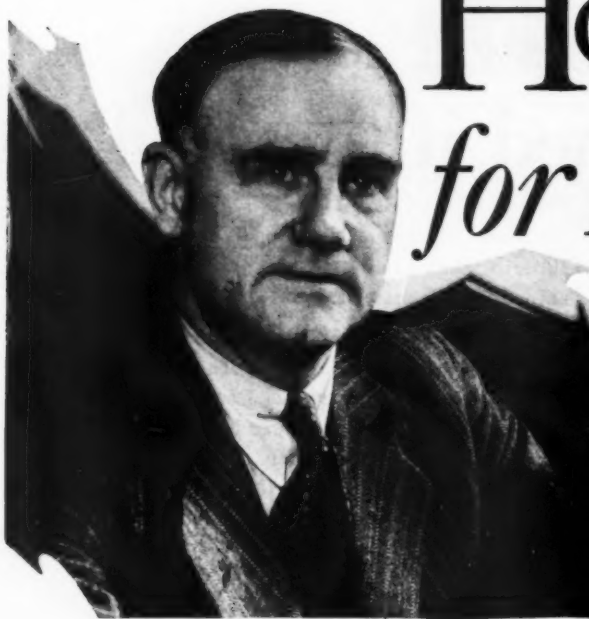
Type C design and construction. Smaller in size, ample wiring space. Smaller switch bases. Quick break to reduce arcing and prolong life. Plug fuse or cartridge fuse type. 21 sizes, from 30 to 100 amperes, 125 and 250 volts. Low price.

CUTLER HAMMER

High Quality Safety Switches For Every Service

(A-375)

"HOUSEWIVES for Insisting on



Mr. Donald MacGregor, president of the MacGregor Electric Service Company of South Bend, Indiana, started in the electrical business in 1901 with the South Bend Electric Company, formerly the old Utility in 1898. "In those days," Mr. MacGregor says, "we made up our own cabinets for centers of distribution and our own fuse blocks before the coming of K. W. cutouts. The day is coming when more switches and receptacles will insure for the contractor a higher value for his work".

THE electrical contractor who keeps himself ahead of competition by giving more than just "service" on every job is the successful contractor of the future—this is the belief of the MacGregor Electric Service Company, prominent South Bend, Ind., specialists in electric power and light installations.

The MacGregor Electric Service Company has found in residential lighting an almost unexploited field so far as complete wiring is concerned. Pursuing their policy of giving added service on every installation, the MacGregor Company has made "complete wiring" for the home an important feature of their advertising.

Here is what Mr. Walter Stickly, Superintendent of Construction to Mr. MacGregor, has to say:

"It is a fact that the electrical work is the last thing most people think about, and with us of course it is the first. We have letters in our files written by housewives particularly commending the fact that we insisted upon additional outlets for lighting not in the original specifications. If electric lighting is a convenience then **DOUBLE OUTLETS** are really **CONVENIENCE OUTLETS**.

"The wiring service must be complete as well as prompt, and this is and always will be our watchword."

This conception of modern wiring service—which gives the client *more* than just an installation—is the policy which many of the most successful contractors in the country have already adopted. *Service* means cooperation with the builder, the architect or the engineer in charge of the plans—to insure *complete wiring at the start*.

How necessary complete wiring is to the builder, is well illustrated in the result of a recent residential survey wherein 30% of the women interviewed indicated their desire for *additional* wiring conveniences of the simplest sort—base plugs, two way switches, side and ceiling lighting. What a potential market for additional wiring! And what an opportunity for the modern contractor to counsel *complete wiring*—to avoid later and costly changes in wiring plans for his client—and himself profit from the increased amount of wiring demanded.

Complete wiring service implies a *lasting* installation and for this, only the best quality wiring can give entire satisfaction. Mr. MacGregor, president of the MacGregor Electric Service Company, says, concerning the selection of wiring devices:

"Since this business was established nearly thirty years ago, we have never used anything but quality merchandise and we are still doing work for customers who gave us orders back in

Commend Us . . . Additional Outlets"

—The MacGregor Electric Service Company finds Residential Lighting an Undeveloped Field for Complete Wiring Service

1901. Particularly on wiring devices our motto is 'The Best Is None Too Good'."

To the MacGregor Electric Service Company, as well as to many leading contractors throughout the country, the choice of high quality electrical devices means "Cutler-Hammer". Here, in a complete line, they can find a high grade device for every wiring necessity.

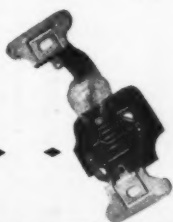
Protect your installations by insisting on good quality devices. You are backed by thirty years experience in the manufacture of electrical equipment when you specify Cutler-Hammer. Make every job a "C-H" job.

CUTLER-HAMMER, Inc.

Pioneer Manufacturers of Electrical Apparatus
1258 St. Paul Avenue
MILWAUKEE, WISCONSIN



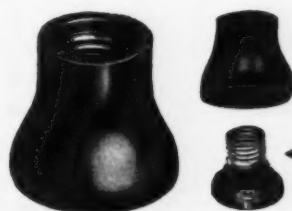
Mr. Walter Stickly, Superintendent of Construction for the MacGregor Electric Service Company.



C-H Catalog 7905 Warning Light Receptacle. Base of C-H Thermoplox, heat-resisting, high quality insulating material which eliminates breakage in shipping, handling and wiring. Contacts are one piece, integral with terminals. Spring clip is heavy brass and when lamp is inserted serves to hold lamp securely. Mounting bracket is heavy, one-piece steel, cadmium plated. Extremely small size and light weight—only four parts. Uses 2 C. P. 125 Volt, intermediate base lamp, obtainable everywhere. Approved by Underwriters.



C-H Catalog 7281 "Rubber Mounted" Toggle Switch. The mechanism—"full-floating" on two resilient rubber cushions—is extremely simple. No screws, and but one rivet. No metal connections to transmit sound. Short, stubby contact blades are heavy to prevent "bounce" and pitting. Heat-proof, crack-proof Thermoplox case protects mechanism from all foreign material. Single-pole, double-pole, 3-way and 4-way types. Approved by Underwriters.



C-H Catalog 7450 Moulded Receptacle. Outer shell and base of C-H Thermoplox, heat-resisting, high quality insulating material. Thermoplox base permits mounting screws to be fastened tightly without danger of chipping or breaking. Outer shell then twists on base. All current carrying parts mounted permanently on base while outer shell serves as insulating cover only. Clean-cut moulding—neat appearance—easily installed. Catalog No. 7451 has shade holder groove. Approved by Underwriters.

CUTLER HAMMER

MODERN WIRING  NECESSITIES

Fittings, Threadless

COVERS FOR ABOVE FITTINGS

DEVICES FOR J K SERIES

	1½"	2"	2½"	3"
Blank Metal.....	\$.63	\$.79	\$1.05	\$1.05
Rubber Gasket.....	.28	.56	.84	.84
Metal, ¼ Nip.....	.82			
" ¼ ".....	.86			
" ½ ".....	.88			
" ¾ ".....	.96			
Porcelain with Holes.....	.96			
Metal, Cord Grip.....	.68	.84	1.12	1.12

DEVICES FOR ABOVE FITTINGS

Crouse-Hinds or Similar

Prices include Globe & Guard

Form 75

	1/2"	3/4"	1"
Lamp Recept. without Shade Holder Groove PR...	\$.35	\$.42	\$.49
" with Shade Holder Groove PR5....	.42	.49	.56
Porcelain Ic. Weatherproof Socket WP2.....	.28	.....	.....
Polarity Plug Receptacle 10 Amp. P.....	.56	.63	.70
" Duplex PD.....	.....	.70	.78

				Sgle. Pole	Dble. Pole	3 Pole
Snap Switch	5 Amp.	125 Volt	Non Indicating....	\$.70	....	\$1.26
"	"	5 "	125 " Indicating.....	.77	....
"	"	10 "	125 " Non-Indicating....	1.12	\$1.47	1.47
"	"	10 "	125 " Indicating.....	1.26	1.68	

TYPE FS FOR FLUSH DEVICES

Type	Any Make					
	1 Gang			2 Gang		
	1/2"	3/4"	1"	1/2"	3/4"	1"
FSE-FSB.....	\$1.05	\$1.26	\$1.40	\$1.82	\$2.03	\$2.24
SC-L & R.....	1.35	1.61	2.03	2.10	2.31	2.66
FST.....	1.75	2.31	2.73	.....	.....	.....
FSU.....	1.26	1.61	2.03	.....	.....	.....
FSD.....	1.75	2.31	2.73	2.38	2.73	3.05

Type	3 Gang			4 Gang		
	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
FSE-FSB.....	\$2.73	\$3.01	\$3.36	\$3.64
FSC-L & R.....	3.08	3.36	3.71	3.99
FST.....
FSU.....
FSD.....	\$3.22	3.57	3.85	\$4.27

GS VAPORPROOF FIXTURES
(Page 56, Crouse Hinds Cat. 2200 or Similar)

Pendant or Bracket Fixture with Recep. Globe and Guard Form	75....	\$7.93
" " " " " " " "	200....	8.84

Covers for Above

	One Gang	2 Gang
Blank Metal Plate.....	\$.37	\$.70
Receptacle Plate.....	.28	.38
Toggle or Push Button Switch Plate.....	.38	

TYPE "O" FOR SNAP SWITCHES, ETC.

"Kondur" Crouse-Hinds "Appleton" or Similar

Type	5 Amp.		10 Amp.			
	$\frac{1}{4}$ "	$\frac{3}{4}$ "	$\frac{1}{4}$ "	$\frac{3}{4}$ "	1"	1 1/2"
OA	\$.63	\$.64	\$.77	\$1.05	\$1.33	\$1.96
OC	.77	.65	.91	1.26	1.61	2.24
OCB	1.19	1.54	1.33	1.75	2.24	2.96
OE	.56	.77	.70	.98	1.26	1.96
OEB	.91	1.12	1.05	1.33	1.75	2.24
OL	.91	1.12	1.05	1.33	1.75	2.24
OLB	1.19	1.54	1.33	1.75	2.24	2.96
OT	1.19	1.54	1.33	1.75	2.24	2.96
OTB	1.54	1.96	1.68	2.10	2.80	3.60
OU	.77	1.05	.91	1.26	1.61	2.24
OUE	1.19	1.54	1.33	1.75	2.24	2.96
OX	1.54	1.96	1.68	2.10	2.80	3.60
OXB	1.89	2.31	2.03	2.52	3.30	4.32

COVERS FOR TYPE "O" FITTINGS

	5	10	20
	Amp.	Amp.	Amp.
Blank Metal Cover, Round.....	\$.21	\$.28	\$.41
Porcelain Cover, Round with holes.....	.21	.35	.49
Metal cover with ¼ or ½ Cord Grip.....	..	.42	.61
Blank Metal Cover with ¾ male or female nipple.....	.35	.52	.74
" " " " " " " "	.42	.49	.56
" " " " " " " "	.49	.56	.63
" " " " " " " "	.56	.63	.70
Rubber Gaskets.....	.63	.70	.77
Lamp Receptacles Porcelain Edison Base.....	.42	.49	.56
" " Composition T Slot.....	.84	..	..

"CAP-SWIVEL-LET"

	1 1/2	1 3/4	1"	1 1/4	1 1/2	2"
"A" Inside Work #1010 to 1064.....	\$0.20	\$0.25	\$0.30	\$0.55	\$0.35	\$1.30
"BW" Threadless Fitt. 4112-4134.....	.45	.50	.75			
"BW" Threaded Fitt. 2112-2124.....	.35	.45				
"FW" Outside Work 4112-1464.....	.40	.50	.65	1.05	1.80	3.00
"LB" Service Entrance 3110-3130.....	.50	.65	.65			
Type "AM" for Nipple 1/2" Long.....	\$0.20	\$0.20	\$0.30	\$0.35	\$0.45	\$0.25
Type "BXA" from 1600 to 1613.....	.20					.30
From 1632-1634.....	.35					

“CONDULETS”

Form 6

	1½"	¾"	1"	1¼"
F Type Ent. Fitt. with Porc. Cov.....	\$1.40	\$1.45	\$1.60	\$1.95
LB Type Ent. Fitt. with Metal Cov....	.45	.50	.60	1.15
	1½"	2"	2½"	3"
F Type Ent. Fitt. with Porc. Cov.....	\$1.60	\$2.85	.....	.....
LB Type Ent. Fitt. with Metal Cov....	1.40	2.45	.....	.....

SHALLOW TYPE

Series 14

FB Angle Fitt. with Cov. 713-83.....	1 ³ / ₈ "	1 ³ / ₈ "	3"	11 ³ / ₈ "
KA End Fitt. with Cov. 1013 to 43.....	\$ 4.5	\$ 5.5	\$ 7.0	\$11.0
KB Elbow Fitt. with Cov. 1013 to 43.....	.20	.20	.25	.35
KB Elbow Fitt. with Cov. 1113 to 35.....	.35	.50	.60	.....
KL Elbow Fitt. with Cov. 1 to 4.....	.50	.55	.60	1.00
Y Capped Elbow Y1 to 5.....	.30	.45	.65	.75
FB Angle Fitt. with Cov. 713-83.....	1 ³ / ₈ "	2"	2 ³ / ₈ "	3"
KA End Fitt. with Cov. 1013 to 43.....	\$1.85	\$3.00	\$0.00	\$8.50
KB Elbow Fitt. with Cov. 1013 to 35.....	.....	.....	.....	.....
KL Elbow Fitt. with Cov. 1 to 4.....	.....	.....	.....	.....
Y Capped Elbow Y1 to 5.....	2.20	.....	.....	.....

DEEP TYPE
Series 34

“GENERAL ELECTRIC”

With Covers		3½"	3½"	1"	1¼"
Ent. Caps Series	1525 to 1534	\$.45	\$.55	\$.70	\$.95
Capped Elbow Series	1470 to 1472	.45	.60	.00	.....
Capped Elbow Series	1480 to 1484	.45	.55	.70	1.85
Insulets Series	1610 to 1612	.30	.25	.00	.....
Insulets Angle Series	1640 to 1642	.40	.40	.50	.....
Entrance Ells	1490 to 1495	.40	.45	.55	1.00
With Covers		1¼"	2"		
Ent. Caps Series	1525 to 1532	\$1.60	\$2.75	\$8.00	\$10.00
Capped Elbow Series	1470 to 1472	.....	.....	.....	.....
Capped Elbow Series	1480 to 1484	2.25	.....	.....	.....
Insulets Series	1610 to 1612	.....	.....	.....	.....
Insulets Angle Series	1640 to 1642	.....	.....	.....	.....
Entrance Ells	1490 to 1495	1.55	3.00	8.35	10.50

COUPLINGS

SP-1410	Complete Coupling for $\frac{1}{2}$ " Conduit.....	Price \$.16
SP-1420	" " " " $\frac{3}{4}$" " .....	.24

FITTINGS, ENTRANCE OR SERVICE

"ADAPTI"

Ent. Ells with Cov. Ser. 1100.....	1 1/2	3 1/2	1	1 1/2
" Fitt. with Cov. Ser. 2700.....	1 1/2	3 1/2	1	1 1/2
Angle Ent. Fitt. with Cover Ser. 2700.....	1 1/2	3 1/2	1	1 1/2
Signal Ent. Caps No. 2810-2811.....	1 1/2	3 1/2	1	1 1/2
Ent. Ells with Cov. Ser. 1100.....	1 1/2	3 1/2	1	1 1/2
" Fitt. with Cov. Ser. 2700.....	1 1/2	3 1/2	1	1 1/2
Angle Ent. Fitt. with Cover Ser. 2700.....	1 1/2	3 1/2	1	1 1/2
Signal Ent. Caps No. 2810-2811.....	1 1/2	3 1/2	1	1 1/2

"APPLETON"

FEB Elbow with Cov. 1700 & 1900.....	1 ⁵ / ₈	3 ⁵ / ₈	1 ⁵ / ₈	13 ⁵ / ₈
FR Elbow with Cov. 1713 to 16.....	\$.50	\$.60	\$.60	\$.17.00
FC End Fitt. with Cov. 1723-33-43.....	.35	.50	.30	
AY Angle Fitt. 1950 to 54.....	.20	.25	.30	
LAY End Fitt. with Cov. 1790 to 94.....	.50	.55	.70	1.85
	.45	.50	.60	1.10
	1 ⁵ / ₈	2 ⁵ / ₈	2 ⁵ / ₈	
FEB Elbow with Cov. 1700 & 1900.....	\$1.90	\$3.25	\$7.50	\$9.00
FR Elbow with Cov. 1713 to 16.....				
FC End Fitt. with Cov. 1723-33-43.....				
AY Angle Fitt. 1950.....				
LAY End Fitt. with Cov. 1790 to 94.....				
	1.75			

"BEND HICKS"

	1½"	1½"	1"	1¼"
Bend Hicks Galvanized.....	\$.50	\$.60	\$.65	\$1.75
	1½"	3"	2¼"	3"
Bend Hicks Galvanized.....	\$2.15	\$4.10	\$6.60	\$8.25

Electrical Contracting, October, 1930

T & B

Ent. Cap 1525-32 with Cover.....	1 1/2"	1 1/2"	1"	1 1/4"
Capped Elbow 1470-84 with Cover.....	\$.40	\$.50	\$.65	\$1.00
Insults 1610-11-12 with Cover.....	.50	.80	.70	1.95
Angle Insults 1640-1 with Cover.....	.15	.20	.25	
Cable Insults 2000 with Cover.....	.30	.30	.60	
	.16			
Ent. Cap 1525-32 with Cover.....	1 1/2"	2"	2 1/2"	3"
Capped Elbow 1470-84 with Cover.....	\$1.70	\$2.95	\$7.55	\$9.25
Insults 1610-11-12 with Cover.....	2.30			
Angle Insults 1640-1 with Cover.....				
Cable Insults 2000 with Cover.....				

"Y. Y."

	16"	18"	14"	16"	2"	2 1/2"	3"
Type 2 Term. Fitt. with Cov...	\$.60	\$.80	\$.51	\$.52	\$.85	\$.85	
Type 6 Term. Fitt. with Bush...	.40	.55	.70	.90	1.30	1.70	2.30
Type 9 Term. Fitt. with Cov...	.70	1.05	1.40	1.80	2.40	3.00	3.60
FCB with Cov. Cover	.40	.50	.60	.95	1.60	2.75	4.15
FAB with Porc. Cover	.25	.40	.45	.85	1.15	2.35	3.80
FC Pipe End Porc. Cover	.15	.20	.25				
FCBX with Cover	.15	.15					
F with Cast Cover	.55	.65	1.15	1.35	1.45		
Y Bend Hick.	.50	.60	.65	1.75	2.15	4.10	

		15-25-40-60		75 Watt	
		No.	Price	No.	Price
Closed Bottom Top & Collar for Brass Socket.....	5573	\$0.45	5578	\$0.50	
Open Bottom with Collar for Brass Socket.....	5485	.35	5487	.40	
Open Bottom No Top or Collar for Brass Socket.....	5691	.30	5692	.35	
Open for Weatherproof Socket.....	5693	.30	5694	.35	
Closed Bottom Top & Collar with Reflector.....	5766	.60	
Open Bottom No Top or Collar Mill Type.....	6095-6	.35	

FOR CABLE & CONDUIT
Minerallac

Hangers			Miscellaneous			Porcelain Bushings		
Mfg. No.	Conduit No.	Lead Covered Cable Size	Price	Mfg. No.	For RC Cable	Price	Mfg. No.	For RC Cable
0	14	No. 14	\$.07	1	3-2-0	\$.10	1	3-2-0
1	15-34	No. 14 to 4/0	11	2	3-4-0	13	2	3-4-0
2	16	4/0 to 300 M	10	3	250M-450M	13	3	250M-450M
3	17	500 to 750 M	10	4	500M-700M	15	4	500M-700M
4	18	800 to 1125M	14	5	750M-1000M	17	5	750M-1000M
5	19	1500 M	16	6	1125-1500M	24	6	1125-1500M
6	20	2000 M	18					

T & B or Similar		Price Each
Type A Clamp Including Bolts Fits Flange 2½ to 7½"	\$.50
Type B & C Clamp Including Bolts Fits Flange 7 to 12"75
Special Bolts.....10

	1 1/2"	1 3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
For One Conduit Steel	\$.13	\$.16	\$.25	\$.33	\$.40	\$.51	\$.65	\$.82
" Two Conduit Mail.	.20	.25	.33	.40	.50
" Four Conduit Mail.	.31	.36

NOTE: For Price of Complete Hanger add Prices of Clamp & Supports.

Perforated or Extension Bar				
For	Conduit	Per Foot		
1/4" to 3/4"				\$.08
1/2" to 3/4"				.10
3/4" to 6"				.12

No.		1 1/2"	2"	2 1/2"	3"
1	Hinge Hanger with Extn. Bar & Lag Screw	\$.18	\$.18	\$.20	\$.25
2	Band Hanger Extn. Bar and Beam Clamp	.22	.22	.23	.26
13	Hinge Hanger, Socket and Beam Clamp	.37	.34	.37	.43
200	Band Hanger Only	.10	.10	.12	.14
No.		1 1/2"	2"	2 1/2"	3"
1	Hinge Hanger with Extn. Bar & Lag Screw	\$.25	\$.27	\$.30	\$.34
2	Band Hanger Extn. Bar and Beam Clamp	.28	.30	.32	.34
13	Hinge Hanger, Socket and Beam Clamp	.40	.40	.42	.48
200	Band Hanger Only	.14	.14	.16	.18

	Finished	Price	
		2 3/4"	3 3/4" 4"
Uno 3 Screw Holder with Screw Top.....		\$0.10	\$0.30 \$0.40
Uno 3 Screw Holder with Contractile Collar.....		.10	.30
Uno Wire Spring Holder with Screw Top.....		.15	.35
Uno Wire Spring Form H with Collar.....		.30	.60
Weatherproof 3 Screw Holders Clamp Top.....		.15	.35 .60

Type	With Screw	With Nail	Without Screws
No. 514 Split Knobs	\$.02 1/4	..	\$.02
514 Solid Knobs	\$.02 1/4
514 Nailit	..	\$.02 1/4	..
514 Split Knobs
4 & 4 1/2 Knobs Solid
No. 9419 Split 1 1/2 x 1 1/4
9420 Split 2 x 2 1/4
22 Victor Split
6061 Solid Top 4 Groove
9062

Diam.	Price Each	Length									
		3' & under	4'	5'	6'	8'	10'	12'	14'	16'	
"	"	.01½	.02	.02½	.03	.10	.17	.25	.32	.40	
"	"	.02	.02½	.03	.04	.11	.19	.27	.35	.44	
"	"	.04	.05	.06	.07	.13	.21	.30	.38	.48	
"	"	.07	.08	.09	.11	.15	.25	.34	.43	.53	
"	"	.10	.12	.13	.15	.18	.29	.39	.49	.59	

2 & 3 Wire		
Standard No. 334 2 & 3 Wire	Unglazed Cleats without Screws	Per Pair \$.04
	Glazed	" " .06

Dimensions				For Size Wire	Price Each
No.	Height	Length	Width		
1A	1 1/4	1 1/4	1 1/4	14 to 0	\$.60
1 1/2 A	1 1/2	1 1/2	1 1/2	6 to 2	0
2A	2 1/4	2 1/4	1 1/4	2 to 0	0
2 1/2 A	2 1/2	2 1/2	1 1/2	0 000	CM
3A	3 1/4	3 1/4	1 3/4	2 000	CM
3 1/2 A	3 1/2	3 1/2	2 000	2 500	CM
4B	4 1/4	4 1/4	2 1/2	1,000.000	CM
4 1/2 B	4 1/2	4 1/2	3 1/2	1,250.000	CM

Size	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
Price per Foot.....	\$.03 $\frac{1}{2}$	\$.03 $\frac{1}{2}$	\$.09	\$.12	\$.16	\$.17	\$.28

Electrical Contracting, October, 1930

For Wire Size	Amps.	Size Wire	Price Each
No. 10 Under.....	25	14	2.03
8.....	35	14	.03
6.....	50	14	.04
4.....	70	14	.05
2.....	90	14	.06
0.....	125	14	.08
00.....	150	14	.10
000.....	175	14	.16
0000.....	225	14	.18
250 M. C. M.....	237	16	.31
400 M. C. M.....	325	16	.46
450 M. C. M.....	362	16	.55
500 M. C. M.....	400	16	.66
600 M. C. M.....	450	16	.70
800 M. C. M.....	550	16	.85
1000 M. C. M.....	650	16	1.00

With Regular Stud Holes Add 50% To Above Prices.

Size	Price
1 1/4"	\$.01
1 1/2"	.01 1/4
1 3/4"	.02 1/4
2"	.05
2 1/4"	.06
2 1/2"	.08
2 3/4"	.11
3"	.19
3 1/4"	.32
3 1/2"	.40
3 3/4"	.58

Links		Price
For Chain		
Non-Insulating Splicing Links—Any Make—Each.....		\$.05
Insulating.....		.15
Luminous Acorns—See Page PL-4 and Page PL-18.		

COUCH

No. 73 Tilting Mail Boxes Post Office approved per Receptacle.....\$3.30

"TILTING" Speaking Tube Type											
Series 7303 to 7309 and 73010 to 73012											
No. of Boxes	3	4	5	6	7	8	9	10	11	12	
Price ea.	12.90	17.20	21.50	25.75	30.00	34.35	38.60	43.00	47.20	51.50	

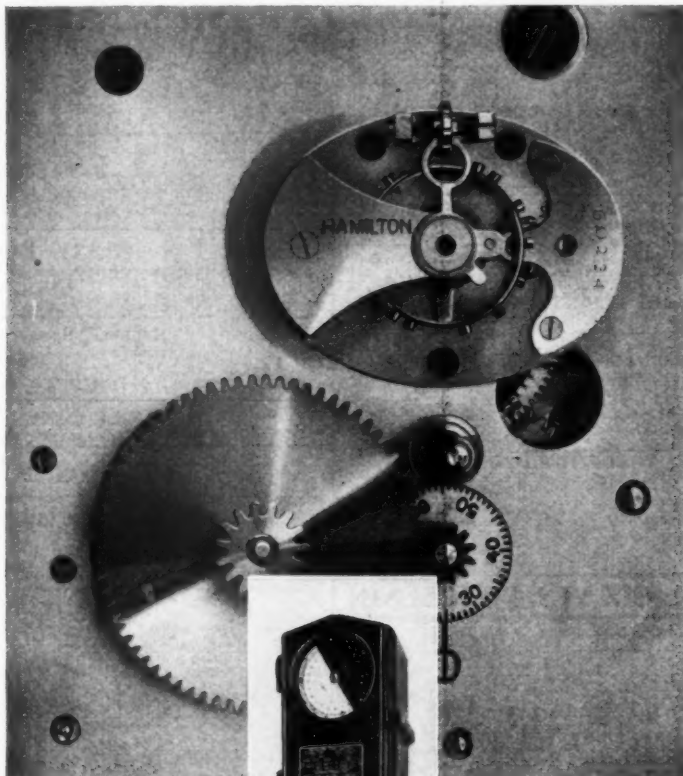
No. 78 or 780 with call button or speaking tube unit.....Price each \$3.15

			MOLDING		Price
022	One Piece Metal Molding for Two Wires	5/8"	Wide—Per Foot..	\$.10	
044	" " " "	"	" " " "	.12	
222	Two " " " "	5/8"	" " " "	.11	
333	" " " "	"	" " " "	.12	

Number	Description	Price	Number	Description	Price
200-201	Bushing.....	\$.02	370	Blank Cover.....	\$.25
223	Clip.....	.04	371-2-3	Porcelain Cover.....	.25
232	Coupling.....	.06	376	Box.....	.10
234	Cross.....	.45	377	Adaptor.....	.10
235	Tee.....	.23	392	Snap Switch.....	.90
236	90 Deg. Elbow.....	.20	397	Key Socket 2 1/4" Base.....	.75
237	45 " ".....	.20	400	Base For Socket.....	.70
238-0	90 " ".....	.20	400X	3" Recep. Base.....	.70
239	Adaptor.....	.06	401	Box Connector.....	.25
303	" ".....	.04	406	Combination Fitting.....	.25
315	Connector.....	.40	407	Utility Box.....	.35
316	90 Deg. Coupling.....	.30	412	Connector.....	.24
317	90 " Connector.....	.30	413	" ".....	.20
321A-B	Rawl Plug.....	.06	414-S	" ".....	.24
323	Joint Cap.....	.35	414-B-C	Toggle Bolt.....	.10
324	Cross.....	.45	415-B-C	Sprag Bolt.....	.10
325	Tee.....	.30	421	Lead Shield.....	.02
336	90 Deg. Elbow.....	.20	425A	Folding Strap.....	.10
337	90 " Ext. Elbow.....	.20	426	Susp. Strap 2 Line.....	.08
337B	Cap for Elbow.....	.15	427	" " 3 ".....	.04
338	90 Deg. Int. Elbow.....	.20	428A	Folding Strap.....	.04
339	Cap for Int. Elbow.....	.15	430	Fixture Rosette.....	.65
340B	2 1/2" Canb. Plate.....	.17	431	Strap.....	.06
340X	Terminal Block.....	.30	433	Double Strap.....	.05
341	Junction Box.....	.45	436	Coupling.....	.06
342	3" 10 Amp. Box.....	.45	437	45 Deg. Elbow.....	.20
343	2 1/2" 6 Amp. Box.....	.45	438	Sgle. Flush Box.....	1.00
344	Base Coupling.....	.05	439	" Surface Box.....	.60
345X	Coupling.....	.04	439X	One Gang Box.....	.80
346	Strap.....	.06	440D	" ".....	.80
348	Cord Rosette.....	.38	439S	Sgle. Surface Box.....	.75
348X	3" Cord Rosette.....	.38	440	Two Gang Surface Box.....	1.10
354	Double Strap.....	.04	440D	Two Gang Box.....	1.10
355	Ground Clamp.....	.12	440X	" ".....	1.10
356-7	Keyless Recep.....	.70		Single Plates 447-48-49-51-61-91.....	
356X	3" Recep. Base.....	.80		Two Gang Plates.....	
360	Open Work.....	.80		452-62-92.....	.30
360X	3" Plug Recep. 660W.....	.95		Three Gang Plates.....	
363	4 1/2" Split Base.....	.35		453-63-93.....	.40
363A-B	4 1/2" Cover Closed.....	.30	441	Single Adaptor.....	.70
365	4 1/2" Canopy Base.....	.60	442	Two Gang Adaptor.....	1.10
365A	" " & Stud.....	.75	500	Bushing.....	.05
365X	4" Com. Plate.....	.10	2155-6	90 Deg. Connector.....	.30
366	6" Canopy Base.....	.85			
369X	Open Work Coup.....	.40			

the New **SANGAMO TIME-SWITCH**

IS DESIGNED BY ENGINEERS TO MEET
ENGINEERING IDEAS OF PERFORMANCE



Close-up of the escapement of the Sangamo Time-switch with cover open, with dial off and with dust cap for escapement removed. Precision of design and construction is evident throughout. Accurate adjustment of clock movement is insured by micrometer adjustment provided on escapement.

Precise synchronization of switching operation with clock movement is effected by dial located below the escapement. Inset: Sangamo Time-switch with conduit-connected base.

THE Sangamo Time-switch has been designed and constructed to measure up fully to every engineering requirement of performance: accurate time-keeping, operation through current interruptions, independence of frequency and voltage variations, suitability for a. c. or d. c. operation.

The Sangamo Time-switch embodies the high-grade construction of the Hamilton-Sangamo clock. The clock mechanism is a standard Hamilton-Sangamo movement with a jeweled Hamilton escapement, temperature compensated, and equipped with a micrometer adjustment, providing perfect regulation without removing the protecting dust cap.

The switch mechanism is actuated by the mainspring through a differential gear. It is not affected by current interruptions, because the mainspring is kept at a constant tension

by a noiseless Sangamo motor.

The 24-hour dial is arranged to provide one "open" or "close" operation, as frequently as every fifteen minutes through a 24-hour cycle.

All working parts are readily accessible, removable as units and interchangeable. This results in low cost operation and maintenance.

Sangamo Time-switches are available with H C Meter terminal chamber or conduit-connected base.

Send for literature.

SANGAMO ELECTRIC COMPANY, SPRINGFIELD, ILLINOIS

WHEELER LIGHTING

> > > > > BUILDS SALES VOLUME

Whatever demand you may receive for Industrial or Outdoor illumination, you will find a unit to meet it efficiently and economically, in the wide range of Wheeler Reflector designs. That fact means that you can absolutely satisfy your customer; you can provide him with the illumination he needs—and you can be sure that it will serve him to his complete satisfaction. It is this wide range of Wheeler lighting units and their proven efficiency that guarantee you a substantial sales volume with the Wheeler Line.

WHEELER
DURATACH



Duratach—a quickly detachable two-piece construction. Combines maximum convenience, economy and lighting efficiency. Recommended for general Industrial illumination.

WHEELER
GLASSTEEL DIFFUSER



Provides finely diffused, even and highly powered light. New spring type globe holder firmly supports globe in reflector neck. An ideal unit for fine operations.

WHEELER OUTSIDE
FLOODLIGHTING UNIT



Especially recommended for floodlighting miniature golf courses—service stations—and similar locations. Has many exclusive and superior features.

WHEELER
DUSTIGHT COVER



Heat resisting glass lens and metal retaining frame protects lamps, sockets and reflecting surfaces. This is but one of the complete line of Wheeler Lighting Accessories.

WHEELER ARCOLUX



A new SIGN REFLECTOR for circular and other small signs. Inconspicuous . . . no extra parts . . . provides intense illumination . . . design prevents any light loss. A popular unit.

WHEELER REFLECTOR COMPANY, 275 Congress St., BOSTON, MASS.
NEW YORK ATLANTA CLEVELAND
St. Louis, Indianapolis, Los Angeles, San Francisco, Seattle. Canada. Canadian General Elec. Co., Ltd.

PL-18

Molding

OVALDUCT

3 Wire..... Per Foot \$.17

OVALDUCT FITTINGS

No.	Description	Price Each
24-CQ	Extension box cover for 4" outlet boxes.....	\$.45
401	Box Connector with 1/2" Locknut.....	.25
2133	Squeeze Type Coupling 1 1/4" long.....	.35
2134	90 Degree Internal Elbow.....	.26
2135	45 " Flat.....	.26
2136	One piece 90 degree elbow.....	.50
1156	90 " Box Connector.....	.30
2159	Wire Toggle Fastener.....	.03
2161	Strap Fastener.....	.02
2181	Connector Ovalduct to Oval Knockout.....	.10
2682	Outlet Box 4 x 1/2".....	.20
2683	Extension Ring for Boxes.....	.20
2685	Outlet Box 4 x 1/2" with Fixture Stud.....	.28
2682	" " 3 1/4 x 1/2".....	.20
2685	" " 3 1/4 x 1/2" with Fixture Stud.....	.26
4170-S1	Sectional Switch Box 4 x 1 1/4 x 1.....	.35
4172-S1	Spacer for above box.....	.30

MOLDING, WIREMOLD

MOLDING

No. 500 2-Wire,	price per ft.	\$.10
" 700 4-Wire,	"	.12
" 1000 Master Size,	"	.23

FITTINGS FOR No. 500

Number	Description	Price
502	Bushing.....	\$0.04
504	Supporting Strap.....	.04
506	Connecting Cover.....	.04
511-12	45 & 90 Deg. Elbows.....	.22
515	Tee Plain.....	.36
516	Cross Plain.....	.38
517	Internal Elbow.....	.24
518	External ".....	.22
519	Corner Box.....	.35
521	1 Piece Rosette.....	.36
523	1/2" Fixture Rosette.....	.70
524	3/4" ".....	.70
525	Receptacle Base.....	.80
526	Keyless Receptacle.....	.95
527	Attachment Plug.....	1.00
532-23	2 1/2 x 3/4" Outlet Box.....	.45
558	Openwork Coupling.....	.36
569	Moulding Connector.....	.08

FITTINGS FOR No. 700

Number	Description	Price
5701	Coupling.....	\$0.04
5702	Bushing.....	.04
5703	Clip.....	.06
704	1 & 2 Hole Strap.....	.06
706	Connection Cover.....	.04
5707	Multiple Strap.....	.10
5708	Fixture Hook.....	.22
5709	Ground Clamp.....	.12
5711-12	Elbows 45 & 90 Deg.....	.22
5715	Tee.....	.36
5717	Internal Elbow.....	.25
5717A	Elbow Pull Box.....	.50
5718	External Elbow.....	.22
5719	Corner Box.....	.45
5720	Narrow Fitting.....	.55
5720A	Show Case Outlet.....	.45
5721	1 Piece Rosette.....	.35
5724	Comb.....	.70
5725	Receptacle Base.....	.80
5726	Keyless Receptacle.....	.95
5727	Plug Receptacle.....	1.00
5728	Utility Box.....	.40
5729	Cond. Type.....	.40
5730	Contact Block.....	.28
5731	Blank Cover.....	.15
5732-3	2 1/2 x 3/4" Outlet Box.....	.45
5734	Closed Extension.....	.65
5735	Distribution Box.....	.75
5736	Blank Cover.....	.16
5737	4 1/4" Extension Box.....	.65
5738	4 1/4" Fixture Box.....	.65
5738D	Diple Thru Hook Conn.....	1.50
5738E	Stamped Hook.....	.08
	Canopy.....	.65

FITTINGS FOR No. 700

Number	Description	Price
5739	6 1/2" Fixture Box.....	\$0.95
5739A	6 1/2" Extension.....	.95
5744	Single Deep Box.....	.85
5744-2	2 Gang.....	1.20
5745	Combination.....	.70
5747	Single Shallow Box.....	.75
5747-2	2 Gang.....	1.05
5747-3	3 ".....	1.15
5748	Single Surface.....	.85
5748-2	2 Gang.....	1.15
5748-3	3 ".....	1.20
5748S	Shallow Rec.....	.65
5749	Switch & Recep.....	1.00
5750	Push Switch Box.....	1.05
5751	Single Adp. Plate.....	.70
5752	2 Gang.....	1.25
5753	3 ".....	1.30
5760	Blank Extension Box.....	.95
5780	Chase Nipple.....	.30
5781&A	1/2 x 3/4 Box Connector.....	.35
5782&A	1/2 x 3/4 Pipe Coupling.....	.36
5783	1/2" Elbow Box Conn.....	.36
5784	1/2" Pipe Coupl.....	.36
5785	Comb. Connector.....	.28
5786	Adj. Offset Conn.....	.40
5788	Openwork Connector.....	.45

FITTINGS FOR No. 1000

Number	Description	Price
1001	Coupling.....	\$0.06
1002	Bushing.....	.04
1003	Clip.....	.06
1005	One Hole Strap.....	.08
1008	Hanger Assembly.....	.90
1008A	Shower Clamp.....	.18
1009	Ground.....	.20
1011	90 Deg. Flat Elbow.....	.40
1013	Adj. Elbow.....	.40
1017	Internal Elbow.....	.40
1018	External.....	.35
1020	Keyless Receptacle.....	.90
1020A	Angle.....	1.40
1020B	Blank or Outlet Box.....	.50
1028	Utility Box.....	.70
1035	Distribution Box.....	1.10
1039	6 1/2" Fixture.....	.90
1048	Switch & Recp Box.....	1.00
1082	Pipe Coupling.....	.60
1085	Comb. Connector.....	.35
1086	Offset Connector.....	.70
1087	Kick Plate.....	.32
1089	Reducing Connector.....	.15
1000F	Flex. Fitting 18".....	1.75

LEWIS METER AND SWITCH CABINETS

CLASS A					MAIN FUSE ACCESSIBLE		
Amp.	Volts	Wire	Fuse	Neutral	Numbers	Price	
30	125-250	3	2	Solid.....	M7311-ML7311.....	\$15.20	
30	125-250	3	2	".....	M7311M-ML7311M.....	14.65	
30	125	2	1	".....	M7211-ML7211.....	14.75	
30	125	2	1	".....	M7211M-ML7211M.....	14.65	
30	125	2	2	Fused.....	M7211D-ML7211D.....	14.75	
60	125-250	3	2	Solid.....	M7312-ML7312.....	19.75	
60	125-250	3	2	".....	M7312M-ML7312M.....	19.05	
60	125	2	1	".....	M7212-ML7212.....	19.30	
60	125	2	1	".....	M7212M-ML7212M.....	19.05	
60	125	2	2	Fused.....	M7212D-ML7212D.....	19.30	
CLASS B					SEALED MAIN FUSE		
30	125	2	1	Solid.....	M5211 or ML5211.....	\$12.10	
30	125-250	3	2	".....	M5311 " ML5311.....	12.80	
30	125	2	2	Fused.....	M 211 " ML 211.....	12.20	
30	125-250	3	2	Unfused.....	M 311 " ML 311.....	12.10	
30	250	2	2	Fused.....	M 221 " ML 221.....	12.95	
60	250	2	2	".....	M 222 " ML 222.....	15.30	
30	125-250	3	2	Unfused.....	M 321 " ML 321.....	12.70	
30	125-250	3	2	Solid.....	M 321SN or ML 321SN.....	12.70	
60	125-250	3	2	".....	M 322 or ML 322.....	15.30	

70

Plugs, Appliance

N-SUNDRIES

PIPE NIPPLES

Made from Galvanized Wrought Iron Pipe

Length	Size 1/2"	Size 3/4"	Size 1"	Size 1 1/4"	Size 1 1/2"	Size 2"	Size 2 1/2"	Size 3"
Close Nipples.....	\$.06	\$.06	\$.06	\$.07	\$.10	\$.14	\$.17	\$.20
2" to 3 1/2" Long.....	.10	.10	.10	.12	.15	.21	.28	.35
3 1/2" to 4" ".....	.11	.11	.10	.12	.15	.21	.28	.35
4" Long.....	.11	.11	.10	.12	.15	.21	.28	.35
5" ".....	.12	.12	.14	.14	.20	.24	.30	.38
6" ".....	.14	.15	.15	.17	.22	.28	.34	.40
7" ".....	.18	.18	.18	.21	.27	.34	.40	.55
8" ".....	.20	.20	.21	.23	.30	.37	.45	.60
9" ".....	.21	.21	.22	.25	.33	.40	.50	.67
10" ".....	.23	.23	.24	.27	.37	.40	.56	.75

NOTE RE NIPPLES—Above prices cover nipples made from ordinary Galvanized pipe as used by plumbers. If local rules call for nipples to be made from genuine conduit add the following:
For nipples made from genuine black conduit add 30% to above prices.
For nipples made from genuine Galvanized conduit add 40% to above prices.

CHASE NIPPLES & COUPLINGS

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Chase Nipples..... each	\$.10	\$.10	\$.14	\$.25	\$.30	\$.45	\$.72	\$ 1.05
Couplings.....	.12	.12	.12	.14	.14	.14	.14	.14

For Erickson Couplings, see Page PL-8.

CHASE MALE REDUCERS

CHASE FEMALE ENLARGERS

T & B or Similar

1/4 to 1/2 Reducer, each.....	\$.20
1/2 to 3/4 Enlargers, each.....	\$.20
3/4 to 1 ".....	.25
1 to 1 1/4 ".....	.40
1 1/4 to 1 1/2 ".....	.30
1 1/2 to 2 ".....	.50

NAILS—Insulated

Millonite Insulated Nails, per dozen.....	\$.05
Leather Nail Heads.....	.05
Staples Insulated.....	.05

PLUGS, ATTACHMENT

ATTACHMENT PLUGS COMPLETE

	Price
"Pony" Composition.....	\$0.15
Standard.....	.20
"Genuine" Bakelite.....	.25
Polarized Standard Comp. Plug.....	.30
Large Size Double T Slot Comp.....	.55
"Standard" Porcelain.....	.50
Weatherproof One Piece Comp.....	.40
Benjamin #903 Swivel Plug.....	.20
Pony Body Only.....	\$0.10
Standard Body.....	\$0.15
Large Body.....	\$0.35

10 AMP.—CAPS ONLY

For Attachment Plugs

"Pony" Cap Composition.....	\$0.10
"Standard" Cap.....	.10
"Genuine" Bakelite.....	.15
Large Size Cap Composition.....	.25
Plug With Extension Knob.....	.20
Soft Rubber Cap.....	.25
"Standard" Cord Grip Cap.....	.30
"Steel Covered Cap.....	.15
"Brass " Cord Grip.....	.40
"Steel " Cord Grip.....	.45
Disappearing Door Comp. Cap.....	.75
"Standard" Brass Cov. Cap.....	1.00
"Knostrain" Comp. Cap.....	.45
"Brass Cov. Knostrain.....	.75
"Comp. Fusible Cap.....	.50
Polarized 2 Wire Comp.....	.25
"2 " Brass Cov. Cap.....	.45
"2 " Steel.....	.30
"2 " Cord Grip.....	.45

20 AMP. CAPS

For Polarized Devices

2 Wire Brass Covered Cap.....	\$0.85
2 " Steel Covered Cord Grip Cap.....	1.00
3 " Steel Covered Cord Grip Cap.....	1.10

30 & 40 AMP. CAPS

For Polarized Devices

30 Amp. 2 Wire Porcelain Cap.....	\$1.45
30 " 3 " Steel Cov. Cord Grip.....	1.80
30 " 3 " Porcelain.....	1.55
30 " 3 " Steel Cov.....	2.20
40 " 3 " Str. Cap Ground. C. G.....	2.15

Flasher Plugs

Diamond Flasher Button.....	\$0.60
"Propp" #530 Flasher Button.....	.50
"Rodal" 110 Volt Plug.....	.50
220 Volt ".....	.65
No. 125 Speeddoodle Plugs.....	\$2.50
No. 164 ".....	.60
No. 161 ".....	.80
No. 165 ".....	.90

PLUGS, APPLIANCE

Make	No.	Description	Price
American Beauty	802	Plug Complete for Small Irons.....	\$0.40
	806	" " Large.....	1.25
	807	" " Toasters & Stoves.....	.20

Electrical Contracting, October, 1930

PLUGS, APPLIANCE, Continued

Beaver	F-1	"Gripall" Super-Type Adjustable Cont.	\$0.45
"Gripall" & "Suitzall"	F-4	"	"
	F-5	Nickel Alloy	.55
	F-6	Armored Casing	.60
	F-7	Nkl. Alloy Cont.	.60
	F-22	Adj. Cont. Bakelite	.50
	F-31	"Suitzall" Heater Plug—Full Size	.20
	F-32	Standard Single Sided Cont.	.15
	F-33	Heater Plug Double Sided Contacts	.20
	F-34	Armored Casing (F-32 Type Armored)	.25
	F-35	Medium Heater Plug—Bakelite	.25
	G-1	Small Heater Plug—Black	.20
	G-2	"Gripall" Heater Switch Plug Adj. Cont.	.80
	G-21	Contacts	.90
	G-22	Competitive Push Button Type	.45
	G-23	New Toggle Type	.45
Betay Ross	126	Shut Off Switch Plug	.40
	125	Safeguard Automatic Heat Control Plug	1.40
	123	All Appliance Plug	.15
Bryant	668	Universal Appliance Plug with Switch	.85
	669	Switchless	.80
	752	Appliance Plug with Indicating Switch	.60
Cutler-Hammer	7051	Appliance Plug with Switch	.60
G. E.	2602	Armored Heater Plug No Switch	.25
	2633	Large Heater Plug	.50
	2642	Switch "with"	.45
	2699	Small "No"	.25
	2826	"Handy Pull" Heater Plug	.35
Hemco	H250	Switchless Appliance Plug	.50
	H260	Switch	.75
Hotpoint	CD6P1	Iron Plug No Switch	.45
	CD6P1	"with" Armored	.60
	CD79P1	"with"	1.00
Kool-Pull (Noark)	8037	Appliance Plug—No Switch	.75
	8039	"with"	1.00
Propp	5	One 4-All Appliance Plug—No Switch	.30
	52	Iron Plug with Switch	.50
	55	Standard Iron Plug—No Switch	.20
	56	Armored	.30
Reynolite	500	Heater Plug	.40
	510	Switch Heater Plug	.75
Rodale	P-21	Heater Plug No Switch Cold Molded	.20
	P-29	Armored	.35
	450	F-wall Heater Plug—No Switch	.45
	610	Bakelite	.25
	815	Armored Heater Plug—No Switch	.35
	850	Iron Plug with Switch	.60
	800	Armored	.85
Simplex	890	Armored Plug—No Switch	.75
	990	Deluxe Chromplate Plug	1.00
Sunbeam	A-85	Heater Plug	1.50
Waage		3 & 4 Heat Plug Only	.50
Westinghouse	299423	Appliance Plug—No Switch	.75
	373656	"With"	1.00

PANEL BOARDS OR FUSE CABINETS

FRANK ADAM

	4	6	8	12
All 30 Amp.—S. P.—NEC Fuses				
"FBX" Safety Type Fuse Boxes	\$ 3.80	\$ 5.60		
"NR" Main Cable Lug Only			\$ 8.90	\$11.90
"NR" Solid Neutral	11.15	13.40	15.60	
NR3G Main Cable Lug Only			16.50	19.80

BULLDOG FUSEMETERS

No.	Description	2	4	6	8	10	12
		Circt.	Circt.	Circt.	Circt.	Circt.	Circt.
CBS	Surface Black Finish with shield	\$1.80	\$2.30	\$3.90	\$7.00	\$9.75	\$10.30
BOS	" Black Finish without Shield	1.65	2.15				
BF	Flush Laminized Finish	2.50	3.70	5.35	8.75	10.30	11.75
BBF	" Black Finish	2.00	2.75	4.70			
BSF	" Lum. Finish with Toggle Switches		6.60	9.90	13.20	15.7	19.80
BSSF	" Lum. Finish with one 30 A. Safftouse		20.50	22.00	31.75	33.35	35.00
BSSF	" Lum. Finish with one 60 A. Safftouse		21.50	22.30	32.25	33.75	35.40
BKF	" Lum. Finish with Pull Box		6.60	9.90	14.85	17.85	19.80

Combinations—For Resale Prices on all other Fusemeter Combinations deduct 17% from Bulldog Co.'s List Prices.

All-Steel-Equip. Co., FUSE CABS

Style & No.	Description	4	6	8	12
		Circt.	Circt.	Circt.	Circt.
C-702-4-6	Surface Small Type	\$1.80	\$2.55	\$ 3.95	
C-902-4-6	Flush Small Type	2.10	2.80	4.85	
Series D	Surface Type Sgl. Fuse				
3004 to 3074	Not for Branch Switch	3.20	5.10	\$ 7.50	\$10.10
	Flush Type				
3034 to 3094	Not for Branch Switch	3.75	5.60	9.00	12.10
	Surface Type Dbl. Fuse				
4002 to 4012	Not for Branch Switch	3.20	5.10	10.10	23.00
	Flush Type Dble. Fuse				
4022 to 4032	Not for Branch Switch	3.75	9.00	12.10	27.00
	Series DS				
3300 & 4300	Fuse Trims for Tog. Sw.		6.90	9.25	13.80
	Flush or Surface-Dble.				
3500 & 4500	Fuse Trims for Tog. Sw.	6.90	9.25	21.00	34.50

G. E. or TRUMBULL—Residence Panel Boards

	4	6	8	10	12	14
	Circt.	Circt.	Circt.	Circt.	Circt.	Circt.
Surface or Flush Mounting						
Single No. 3104 to 3212						
Flush Mtg.						
Or Fusing 2906 to 2912						
Surface Mtg.	\$2.80	\$ 4.55	\$ 9.65	\$11.25	\$13.00	\$15.50
Double No. 3404 to 3412						
Flush Mtg.						
Or Fusing 2704 to 2712						
Surface Mtg.	9.10	12.40	18.15	23.10	26.40	

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CUTLER-HAMMER

Fuse Panels—Flush Mounting

Circuits	2	4	6	8	10	12
	Circt.	Circt.	Circt.	Circt.	Circt.	Circt.
Black Finish Series 4355 H1 to 6	\$ 1.90	\$ 2.60	\$ 3.45	\$ 4.65	\$ 5.35	\$ 6.45
Aluminum Finish Series 4355 H1 to 6	2.40	3.45	4.65	5.35	6.45	7.55

KILLARK

Standard Flush Type Panels	2	4	6	8	10	12
	Circt.	Circt.	Circt.	Circt.	Circt.	Circt.
Series KRP—2 to 12 Inclusive	\$2.00	\$2.90	\$4.75	\$6.50	\$8.50	\$10.75

SQUARE D

Fuse Cabinets

Series 37000 to 39000	2	4	6	8	10	12
	Circt.	Circt.	Circt.	Circt.	Circt.	Circt.
Flush Series 37000 Black	\$1.85	\$2.50	\$4.50	\$7.90	\$9.50	\$11.15
37000 Aluminum	2.35	3.35	5.10	8.30	10.00	11.15
Surface Series 39000 Black	1.85	2.50	4.50	7.90	9.50	11.15

NOTE: 2 & 4 Circuit Flush Type arranged for mounting direct to front side of studding with channels for lathe ends, each.....\$0.20

Combination Fuse Cabinets

60 Amp. Fuse Break and 30 Amp. Circuits	2	4	6	8
	Circt.	Circt.	Circt.	Circt.
Flush Mounting Aluminum	\$7.45	\$12.40	\$14.00	\$14.85
Surface Black	6.45	10.75	11.55	12.40

WADSWORTH Dead Front Fuse Cabinets

Surface Mtg. Single Fusing	2	4	6	8	10	12
	Circt.	Circt.	Circt.	Circt.	Circt.	Circt.
Flush Mtg.—Single Fusing	\$2.30	\$3.00	\$4.85	\$5.75	\$7.55	\$11.55
Flush Type for Tgle Sw.	2.85	3.80	6.10	7.55	10.20	12.00

WESTINGHOUSE Junior Residence Type

Galvanized or Gray Box Junior Residence Panels	2	4	6	8	10	12
	Circt.	Circt.	Circt.	Circt.	Circt.	Circt.
No. K-64012-21 & 64052-61	\$1.65	\$2.50	\$ 4.50	\$ 6.60	\$ 7.85	\$9.90
Junior Branch Fuse Attach No. K-62398 & 62399	1.75	2.55				
Junior Building Panels for Toggle Switches						
No. K-64034-42 & 64074-81	6.60	9.90	13.20	16.50	19.80	

P-SUNDRIES

RUNNING THREAD, PIPE

Price per Foot	1/4"	3/8"	1/2"	3/4"	1"
	\$.25	\$.30	\$.35	\$.40	\$.45

SOLDERING PASTE

(Also on Page PL-25.)

Make	2 Oz. Cans	2 Oz. Tubes	4 Oz. Cans	Half Pound Cans	One Pound Cans
Allen	\$.25	\$.40	\$.50	\$.90	\$1.50
Burnley	.20		.30	.40	.70
Crescent	.25		.40	.65	1.00
G. E.	.25		.40	.90	1.50
Highland	.45			.90	1.50
Nokorode	.25			.90	1.50
Star	.25		.40	.65	1.00

PAINT & VARNISH, Insulating

Make	Per Pint	Per Quart	Per Half Gallon	Per Gallon
Armalc Insulating Compound	\$0.50	\$0.75	\$1.25	\$2.50
Ajax Varnish No. 25	.40	.65	1.00	2.00
Enamelac Insulating Varnish	.40	.70	1.25	2.25
G. E. Black Baking or Air Drying	.50	.75	1.25	2.25
G. E. Clear Baking or Air Drying	.50	.75	1.25	2.50
Mineralac Insulating Compound	.40	.75	1.50	3.00
P. & B. No. 2 Paint	.40	.75	1.50	3.00
Pothead Compound, per Pound				.55

CONDUIT WOOD PLUGS

Price Each	1/4"	3/8"	1/2"	3/4"	1"	2"
	\$.02	\$.03	\$.05	\$.10	\$.16	\$.26

For Pipe Straps, see Page PL-25. For Solder, Sticks, etc., Page PL-23.

PLATES & PLUGS, RECEPTACLE

PLATES—For Flush Receptacles

	Composition	.040 Gauge	.060 Gauge
		Lacquer B. Brass	Lacquer B. Brass
Single or Duplex Plate	\$0.20	\$0.15	\$0.20
Lift Cover Plate 1 Outlet		.35	.45
Radio Plates—Sgle. or Duplex		.15	.20
Telephone " One Outlet	.20	.35	.45
" Double	.20	.45	.50
Disappearing Door Plate Sgle.			.75
" Duplex			1.15
Chapman Receptacle			.75
Blank Plates One Gang	.20	.30	.40
Bull's Eye and Single Plate	.60	.70	.75
" and 1 Switch Comb.	.70		.75
" and 1 Recep.			.65
Switch and Sgle. or Duplex Recep.	.40	.50	.60
Steel Plates for 30 and 40 Amp. Polarized Receptacles			.75
Solid Brass Plates 30 and 40 Amp.			1.50
Screwless Plates Bakelite for Hubbell Receptacles			.55
Porcelain Enameled Plates for Sgle. or Duplex Receptacles			.25
Mirror Glass Plates for Single Receptacle			1.00
DeLuxe Metal Plates for Single or Duplex Receptacles			.90
DeLuxe Wood Inlaid Plates for Single or Duplex Receptacles			2.35

STANDARD RECEPTACLES OR CONVENIENCE OUTLETS

STANDARD ROCKET FLAMES OR CONVENIENCE OUTLETS			
		Plates Extra	Price
Shallow	Without Plates	Single.....	\$1.25
	Comp. Side Wired	Duplex.....	.35
		Single.....	.28
Deep	Comp. Top	Duplex.....	.35
		Single.....	.40
	Comp. Side	Duplex.....	.60
Deep	Comp. Top	Single.....	.60
		Duplex.....	.40
	Comp. Side	Single.....	.60
Deep	Comp. Top	Duplex.....	.60
		Single.....	.40
	Comp. Side	Duplex.....	.60

SUNDRY RECEPTACLES
Plates Extra Except Where Marked "X"

	Prices	<u>Sixteen Except Where Indicated</u>	Price
For Lift Cover Plate Single.....	Duplex.		\$.70
x With Rd. Met. Cvr. For 3 1/8" Box Single	Duplex.		.30
" " " " " Duplex..			.45
x " " " " " Single.....			.35
x " " " " " Duplex..			.50
x With Rd. Brass Plate Small Single.....			1.10
" " Large.....			1.25
Edison Screw Base Recp. Single.....			.25
Chapman Receptacle.....			.65
Radio Single.....			1.35
" Duplex.....			1.35
Disappearing Door Recp. Single.....			.75
" Duplex.....			1.10
Screwless Plate Recp. Single.....			.30
" Duplex.....			.45
10 Amp. Polariz. For 2 Wire Single.....			1.25
20 " " "			1.40
30 " " "			1.25
40 " " "			3.00
10 " " Single.....			1.40
20 " " "			1.60
30 " " "			1.60
40 Amp. Polariz. 3 Wire With Box Cover.....			5.50

No.	Connections	Brass	Bakelite
134	Several loud speakers.....	\$2.50	\$2.60
135	Loud speaker.....	1.00	1.10
136	Aerial & ground.....	1.00	1.10
137	Battery (with plug).....	2.60	2.60
138	Electrical outfit.....	1.00	1.10
142	Double loud speaker.....	1.15	1.85
238	Loud speaker, aerial & ground.....	2.00	2.20
241	Aerial, ground & elect'l.....	2.00	2.20
242	Loud speaker & elect'l.....	2.00	2.20
243	Aerial, ground & battery.....	2.00	2.20
253	Loud speaker, aerial, ground & elect'l.....	3.00	3.00

	Price
Pilot Light-Plate and Single Outlet Comp.....	\$2.00
Duplex	3.50
Switch and Bull's Eye.....	3.00
Recept. Only With Plate.....	2.00
Switch and Plate 10 Amp. Sfte. Out. Comp.....	1.75
Hubbell Switch Tap Combination Screw Plate #7003-Recept. #7163.....	1.75
Hubbell Switch Tap & Pilot Light Comb. Screw Plate #7317-Recept. #7280.....	3.35

ALABAX RECEPTACLES AND FIXTURES									
P & S, Hubbell, Arrow, G. E., Bryant, Weber									
Symbol: Column No. 1—Number of Alabax Fixture.									
Column No. 2—Resale Price Standard White Glaze Finish.									
Column No. 3—Resale Price All Over Color B-D-E-F-G-H-J-K-L-M.									
Column No. 4—Resale Price Stripe Decoration No. 1A-2A-4A.									
Column No. 1	Column No. 2	Column No. 3	Column No. 4	Column No. 1	Column No. 2	Column No. 3	Column No. 4	Column No. 1	Column No. 2
Number	White	Color	Stripe	Number	White	Color	Stripe	Number	White
AL 844	\$2.90	\$3.35	AL 849	\$2.30	\$2.60	\$2.75		
845	3.20	3.65	850	2.30	2.60	2.75		
846	3.45	3.90	\$4.35	851	1.40	1.65	1.85		
847	3.75	4.20	4.65	852	2.90	3.35	3.80		
848	1.85	2.10	2.30	853	3.20	3.65	4.10		

(Concluded in next column)

Column No. 1 Number	Column No. 2 White	Column No. 3 Black	Column No. 4 Stripes	Column No. 1 Number	Column No. 2 White	Column No. 3 Black	Column No. 4 Stripes
AL859	1.85	\$2.15	\$2.30	AL1275	\$0.45	\$1.00	\$1.10
863	1.85	2.15	2.30	1276	.15	.30	.40
864	2.35	2.85	3.25	1300	2.80	3.05	3.25
865	2.70	3.10	3.60	1301	2.80	3.05	3.25
866	2.35	2.85	1349	2.60	2.90	3.10
867	2.70	3.10	1350	2.60	2.90	3.10
869	2.50	2.75	3.00	1351	1.70	1.95	2.15
870	2.70	2.75	3.00	1369	2.80	3.05	3.25
871	1.55	1.85	2.10	1370	2.80	3.05	3.25
872	2.90	3.35	3.85	1371	1.85	2.10	2.30
873	3.20	3.65	4.10	1449	2.70	2.85	3.15
875	2.30	2.60	2.80	1450	2.70	2.85	3.15
898	1.00	1.20	1.40	1451	1.75	2.05	2.25
919	1.65	1.90	2.10	1469	2.85	3.15	3.30
920	1.65	1.90	2.10	1470	2.85	3.15	3.30
921	.75	1.00	1.15	1471	1.95	2.20	2.40
921	1.62	1.90	2.10	1475	2.65	2.90	3.10
923	2.30	2.60	2.75	1476	2.85	2.90	3.10
924	2.00	2.25	2.45	2007	1.25	1.50	1.70
929	1.95	2.20	2.40	2008	1.35	1.60	1.75
930	1.95	2.20	2.40	2009	1.25	1.55	1.70
949	2.00	2.25	2.45	2010	1.40	1.65	1.80
950	2.00	2.25	2.45	2011	1.05	1.35	1.50
951	1.10	1.35	1.55	2012	1.10	1.40	1.55
952	1.95	2.20	2.40	2013	1.55	1.85	2.00
960	1.00	1.30	1.45	2014	1.85	2.15	2.10
962	2.00	2.25	2.45	2015	1.40	1.65	1.85
969	2.15	2.45	2.60	2371	1.85	2.15	2.35
970	2.15	2.45	2.60	2469	3.20	3.65	4.10
971	1.25	1.50	1.70	2471	2.75	3.20	3.65
980	1.55	1.80	2.00	2669	4.40	4.85	5.30
981	1.40	1.70	1.85	2671	3.95	4.40	4.85
982	1.85	1.80	2.20	2846	3.45	3.90	4.35
983	1.50	1.75	1.95	2847	3.20	3.55	3.85
984	1.35	1.60	1.80	2852	3.75	3.35	3.80
985	1.30	1.45	1.65	2853	3.20	3.65	4.10
989	1.70	1.95	2.15	2854	3.35	2.85	3.25
990	1.75	2.05	2.20	2865	2.65	3.10	3.55
1200	2.00	2.25	2.45	2872	2.90	3.35	3.80
1201	2.30	2.55	2.75	2873	3.20	3.65	4.10
1202	2.00	2.25	2.45	9826	1.90	2.25	2.45
1203	2.25	2.55	2.75	9836	2.10	2.20	2.35
1273	.50	.60	.70	9896	2.40	2.60	2.80
1274	.75	.90	1.00	9906	2.20	2.45	2.65

The above Prices do not include Glassware or Lamps.

STANDARD RECEPTACLES or Lampholders						
Keyless Porcelain Standard Base					Universal Nos	Price
Pony Cleat Receptacle No.	S. H. Groove—Side Screws.....				50715	\$0.15
" Round " "	" Center				9171	.20
Standard Cleat " "	" Side				28735	.30
" " " "	" " " "				9402	.30
" " With " "	" " " "				4013	.40
" " Brass Shell " "	" " " "				9403	.45
" Concealed " "	No. S. H. Groove.....				4000	.45
" " " "	" " " "				4001	.50
Oblong " " "	With " " " "				55300	.55
Round " " "	" " " "				8105	.45
" " " "	Removable Kings.....				50744	.30
Oblong " " "	S. H. Grooves.....				4026	.60
Mogul-P & S No. 520-Arrow	5012-Hubbell 3464-G.E. 1194					.85
Miniature or Candelabra	Receptacle (Small Type).....				9445-6	.20
	Extended Type.....				366-7	.25

		Price
Porcelain Pull for 3 1/4" & 4" Box		1.85
" " " " " " " "		1.85
Brass Shell " " " " " "		2.00
Porcelain Keyless for 3 1/4" Box		.40
" " " " " " " "		.50
" " " " " " " "		.50
" " " " " " " "		.50
" " " " " " " "		.60
Brass Shell " " " " " "		1.00
Porc. Rec. Metal Cover for 3 1/4" Box		.25
" " " " " " " "		.30
" " " " " " " "		.30
" " " " " " " "		.80

T-SLOT BOX RECEPTACLES—Surface Type		Price
10	Amp. Standard Receptacle.....	\$0.50
10	" Receptacle with Covered Term.....	.55
20	" Polarized Conduit Receptacle.....	.85
10	" Sgls. Porc. Rec. for 3/4" Box.....	.45
10	" Duplex " " 3/4" ".....	.50
10	" Duplex " " 4" ".....	.60
10	" Duplex " " 4" ".....	.70

T-SLOT HEAVY DUTY & POLARIZED		Price
Cheat and Concealed Bases		
10 A. Small T Slot Concealed	2 Wire	\$.45
10 A. Small T Slot Cheat	2 "	.45
10 A. Small For Wood Molding	2 "	.45
10 A. Polarized Cheat	2 "	.60
10 A. Polarized Concealed	2 "	.60
10 A. Polarized Wood Molding	2 "	.65
10 A. Fielding Receptacle	2 "	.50
10 A. Polarized Concealed	3 "	.75
20 A. Polarized Cheat	2 "	.75
20 A. Polarized Concealed	2 "	.75
20 A. Polarized Wood Molding	2 "	.80
20 A. Polarized Concealed	3 "	1.10
30 A. Polarized Composition	2 "	1.35
40 A. Polarized Porcelain	2 "	1.15
40 A. Polarized Composition	3 "	1.80
Portc. Sub. Base for 40 Amp. Rec.		.30

Price Each

Benco Keyless Socket	with Clamp Ring #7400 to 4703 Medium Base	\$1.25
"	" without " " " "	1.05
" Pull	" with " " " "	2.00
Benco Keyless Socket	Copper or Alum. #4200-1-4-5 & 4335 & 7.	.75
"	Brass #4202-4203-4336	.90
" Pull	#4207-8 4225-26 4236-37 Brass, Copper or Alum.	1.50
" Mogul	Copper Clad #4210-4297	2.00
Benco Threaded Hold Tight	" " " "	.35
Poish. Alum. Weatherprf	#4215 & 4217	.36
Copper	#4370-72 & 73.	.40
Brushed Brass	#4377-79 & 80	.40
		.60 \$1.00
		.60 1.00

BENJAMIN MOGUL SOCKETS

	Without Yoke	% or 3/4 Iron Yoke	% or 3/4 Alum. Yoke
One Piece Socket with Lamp Grip.....	\$1.00	\$1.15	\$1.50
Two Piece Socket with Lamp Grip.....	1.20	1.45	1.70

BENJAMIN REFLECTOR SOCKETS

Porcelain or Similar With Type X or XR Fitting

Medium Base Keyless	Tapped 16-1/4" X No. 4650-51 & 65.....	\$1.20
"	Self-Locking 16-1/4" X No. 4528-29-30-31-32-33.....	1.60
"	" Shock Absorb. 16-1/4" X No. 4676-77-78-80-81.....	1.40
"	" Shock Absorb. Self-Locking No. 4548-49-50-52-53.....	1.95
"	" Pull Chain No. 4534-35 & 4660-61-67.....	2.05
Mogul Base Keyless	Shock Absorbing No. 4670-71-72.....	1.95
"	" Not Shock Absorbing No. 4656-57 4660.....	1.65
If X or XR Fitting	not supplied on above sockets deduct.....	.45

SWITCHES, FLUSH TUMBLER

Plates & Boxes Extra

Square Handle Porcelain Cup	Sgl. Pole	1.31
	Dble.	1.07
	3 Way	1.51
Composition Cup	Sgl. Pole	3.00
	Dble.	1.40
	3 Way	1.35
20 Amp. Sgl. Pole		2.40
20 Amp. Dble. Pole		1.50
Round Handle Porcelain Cup	Sgl.	1.64
	Dble.	.31
	3 Way	1.00
		3.00

New Circuit Type

Twin-2 Sgle. Pole Switches . . .	\$1.35
Twin-1 Sgle. Three Way . . .	1.50
Twin-2 Sgle. 3 Way Switches . . .	1.65
Triplet-3 Sgle. Pole Switches . . .	2.00
Triplet-2 Sgle. & 1-2 Way Switches . . .	2.20
Lock Type Porcelain Cup-Sgl. Pole . . .	1.50
" " " Dbble. . .	2.20
" " " 3 Way . . .	1.80

EXTRAS—For Luminous Tip add for Each Handle.....	4	3.8
For Glo Guide Handle Switches add for Each.....	1.0	

TUMBLER SWITCH COMBINATIONS

Description		Price
10 A. D. P. Switch—Pilot Lt.	—, .060 Plate	\$3.00
10 " " " " Receptacle	" " "	1.75
20 " " " " 15A " "	" " "	2.50
Switch—Tap & Pilot Light with	" "	3.30
& Receptacle	" "	1.75

PLATES For Tumbler Switches

	1	2	3	4
Stamped Brass Sprayed Finish .040 Thick.....	\$.15	\$.30	\$.45	\$1.10
" " Brush Brass .040 ".....	" .20	" .40	" .60	" 1.30
" " Sprayed .060 ".....	" .25	" .50	" .75	" 1.60
" " Brush Brass .060 ".....	" .30	" .60	" .90	" 1.80
Bakelite or Composition Molded.....	" .30	" .40	" .60	" .80
Two & Triple B. B. or Bakelite Plates.....	" .25	" .35	" .50	" .75
Comb. Switch and Recept. - Moulded Composition.....	" .30	" .40	" .50	" .75
Pilot Light.....	" .75	" .90	" 1.10	" 1.50
Hubbell Bakelite Screwless Plates.....	" .60	" 1.10	" 1.60	" 2.20
Brush DeLuxo Wood Inlaid any Finish.....	" 2.75	" 4.70	" 7.70	" 10.00
Glyt All Metal.....	" 1.00	" 1.75	" 2.45	" 3.20
Gray Porcelain Enamel Plates.....	" .25	" .40	" .50	" .75
Glass Mirror Plates.....	" 1.00	" 1.75	" 2.50	" 3.20
Blank Plate .040 Brush Brass Finish.....	" .30	" .60	" .90	" 1.20

SWITCHES, FLUSH PUSH

Plate & Boxes Extra

Standard Shallow Type Porcelain Cup—Single Pole.....	\$0.37
" " " " Double	1.07
" " " " 3 Way	1.67
Deep Type Porcelain Cup—Single Pole.....	.77
" " " " Double	1.17
" " " " 3 Way	1.17
Special High Grade Composition Cup—Single Pole.....	1.47
" " " " Double	1.77
" " " " 3 Way	1.77
Lock Type Porcelain Cup—Single Pole.....	1.57
" " " " Double	2.27
" " " " 3 Way	2.27
Electroler Non-Indicating	8.77
Indicating	1.67
Extra for Luminous Button Add Per Switch	

PUSH SWITCH COMBINATIONS

With Plates

Bryant 117	D. P. Indicat. Switch Flush Receptacle & .060 Plate.....	\$2.35
413	One Push Switch-Bulls Eye and Solid Plate.....	4.50
518	Disap. Door Recp. Bulls Eye—Solid Plate.....	8.25
465	D. P. Flush Switch & Pilot Lamp .060 Plate.....	3.65
467	Flush Switch—Flush Recept.—Bulls Eye—Solid Plate.....	5.75
558	Duplex.....	6.60

PLATES For Flush Push Switches

	1	2	3	4
Description	Gang	Gang	Gang	Gang
Stamped Brass Sprayed Finish .040 Thick.....	\$.15	\$.30	\$.45	\$1.10
" " Brush Brass .040 .....	.20	.40	.60	1.35
" " Sprayed .060 .....	.25	.50	.75	1.35
" " Brush Brass .060 .....	.30	.60	.90	1.80
Bakelite or Composition .....	.20	.40	.60	..
Bryant DeLuxe Plates Wood Inlaid.....	2.75	4.70	7.70	..
" " All Metal.....	1.00	1.75	2.45	..
Guth Porcelain Plates.....	.25	.60	1.00	..
Glass Mirror Plates.....	1.00	1.75	2.50	3.25
Blank Plate .040 Brush Brass Finish.....	.30	.60	.90	..
Combination Switch & Receptacle Ground.....	.30	..	..	..
" Push Recept. Plates .060 Glass.....	..	.50	..	..
" " " " "Guth Enameled.....	..	.65	..	..
" " " " "Mirror Glass.....	..	1.75	..	..

SWITCHES, SURFACE SNAP

METAL COVERED SNAP SWITCHES

Poles	Volts	Type	Size	Amp.	10	20	30
Single	125	Non-Indicating.....	Pony	\$.35	.....	.....	.....
		Indicating.....		.40	.....	.....	.....
		Non-Indicating.....	Standard	.60	\$.75	\$1.40	\$2.10
		Indicating.....		.65	1.05	2.30	3.45
		Non-Indicating.....		1.00	1.20	2.40	2.80
		Indicating.....		.....	2.95	3.75	4.50
Double	250	Non-Indicating.....		.....	3.10	3.85	4.60
		Indicating.....		.60	1.50	2.40	2.80
Triple	"	Non-Indicating.....		1.50	.....	.....	.....
		Indicating.....		1.45	1.45	2.20	.....
3-Way	125	Non-Indicating.....		1.65	1.65	2.85	.....
4-Way	"	Non-Indicating.....		.....	.....	.....	.....
Electrolite	"	Indicating.....		.....	.....	.....	.....

ALL PORCELAIN SNAP SWITCHES

Poles	Volts	Type	Size	5 Amp.	10 Amp.	20 Amp.	30 Amp.
Single	125	Non-Indicating.....	Pony	\$.55	.....	.....	.....
"	125	Indicating.....	"	.60	.....	.....	.....
"	125	Non-Indicating.....	Standard	.65	\$1.05	\$2.10	\$2.65
"	125	Indicating.....	"	.75	1.00	1.80	2.50
Double	250	Non-Indicating.....	"	.95	1.20	2.40	2.95
"	250	Indicating.....	"	1.10	1.35	2.60	3.00
3-Way	125	Non-Indicating.....	"	.95	1.35	2.60	3.00
4-Way	125	Non-Indicating.....	"	1.50	2.05	.....	.....
Electrotherm	25	Non-Indicating.....	"	1.50	1.50	.....	.....
"	125	Indicating.....	"	1.70	1.70	.....	.....

TUMBLER OR TOGGLE SNAP SWITCHES

	Metal or Composition Covers			
	Single Pole	Double Pole	3 Way	4 Way
125-250 Volt				
5 Amp. Closed or Slott. Base.....	\$.35	\$.85	\$.80	\$1.40
5 Amp. with Outlet Box Cover.....	.55	.....	.90	.....
10 Amp. Closed or Slott. Base.....	.80	1.10	1.25	.....

SNAP SWITCHES FOR WOOD MOLD, CONDULETS, ETC.

	Metal Covered		All Porcelain	
	5 Amp. 125 Volts	Indicating	Non-Indicating	Non-Indicating
Single Pole.....	\$.65	\$.60	\$.75	\$.70
Double.....	1.10	1.10	1.20	1.10
Three Way.....	1.50	1.00	1.20	1.10
Electroliner.....	1.50	1.50	1.20	1.10

PARTS FOR SNAP SWITCHES

Handles—Standard Type Each \$.12—Ratchet Type.....	..
Bases—Porcelain 5 Amp. \$.12—10 Amp. \$.15—20 Amp.....	..
Covers—10 Amp & Under Metal \$.15—Porcelain.....	..
Over 10 Amp.....	.30

**SWITCHES, PULL CORD, CHAIN,
CANOPY, LEVOLIER, ETC.**

PULL CORD SWITCHES—BODIES ONLY

Small Socket Type

Ceiling—Bottom Pull.....	40.
Wall—Side Pull.....	1.
Rosette—Side Pull.....	1.
Fixture—Bottom Pull.....	1.
1/2" Brass Cap.....	1.
3/4" Brass Cap.....	1.
1" Brass Cap.....	1.
Addition	
for	
Caps and Bases	
for	
Above Switch	
Bodies	
Small Cleat Base.....	1.
Small Slotted or Concealed Base.....	1.
Large Concealed Base.....	1.
Wood Moulding Base.....	1.
Small Box Base Brass Covered.....	1.
3/4" Box Base Brass Covered.....	1.
1" Box Base Brass Covered.....	1.
3/4" Box Cover with Ring.....	1.
1" Box Cover with Ring.....	1.

HEAVY DUTY PULL CORD SWITCHES, METAL COVER
With 8 Feet Heavy Cord

S. P. with Small Porc. Slotted or Solid B.	.....	\$1.
D. P. with Small Porc. Slotted or Solid B.	.....	1.
3 & 4 Point with Small Porc. Slotted or Solid B.	.....	1.

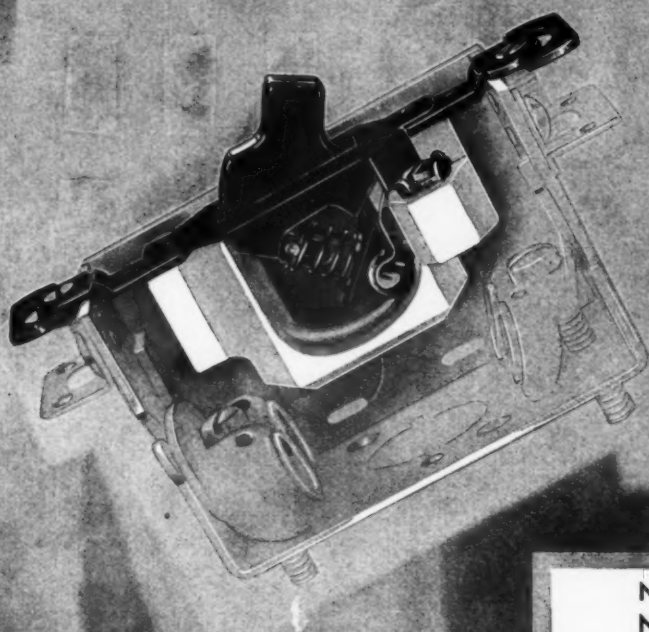
These switches can be furnished with side or bottom open, at same price.

4 Point with Small Pore, Slotted or Solid B. 1.
These switches can be furnished with side or bottom open, at same price.

Electrical Contracting, October, 1930

ARROW

New Switch for Faster Wiring



More wiring space

Quieter mechanism

Roller, wiping contact

No. 1301—Single Pole

No. 1303—Three Way

NEW Tumbler Flush Switch—made smaller to make your wiring space larger. Makes wiring fast and easy in the shallowest switch box. . . The famous, compact Trigger Switch mechanism used for years on motor-driven appliances. ♣ Roller action of mechanism with wiping contact makes this the one quiet switch, competitively-priced. With the smoothly silent roller action goes longer life, with heavier operating lever, fewer working parts. ♣ Easily takes care of the current-surge in gas-filled (Type C) lamps. Heavy roller dissipates heat; rolling action against contact clip wipes it clean and prevents pitting.

A great buy for the Contractor in low-cost installation, customer-satisfaction, dependable lighting control. Rating: 10 Amps., 125 Volts; 5 Amps., 250 Volts. Write for data or ask your Jobber's salesman.

ARROW ELECTRIC DIVISION

THE ARROW—HART & HEGEMAN ELECTRIC CO.

HARTFORD, CONN.



Schrafft's Store, Boston, Mass.

Parker, Thomas & Rice, Architects

Illuminated by Frink Reflectors

With Frink Multilite Reflectors a Great New Range of Profitable Work is Open to You

THIS view of the Schrafft's Store in Boston is a striking example of the possibilities that lie in the use of Frink Multilite reflectors. By placing a Multilite above the window heads and directing the light upward against a shirred golden yellow drape the architectural beauty of the window was preserved for night appearance . . . Multilite is a unit fixture, consisting of a series of Silverlite Reflectors mounted in a metal trough and completely wired and ready to install. From two to ten reflectors come as a unit, wired with two circuits permitting of alternate or multiple control. Various intensities and color effects are easy to achieve . . . Send for our circular 79-B for complete information.

THE FRINK CORPORATION
369 LEXINGTON AVENUE NEW YORK CITY



G-E TAPES add Endurance to your work

INSULATING

Materials for Every Purpose

Varnishes, Oils, Shellacs, Paints.
Filling and Sealing Compounds.
Varnished Cloths and Tapes.
Insulating Papers.
Core Solder and Fluxes.
Cords and Twines.

Soundly-made splices *stay sound* if you use G-E Splicing Tapes. General Electric makes these tapes for its own use and puts fullest dependence in them. So can you. G-E 363 Splicing Gum will not dry up and flake off. Nor will it oxidize copper. It is made of para rubber compound with *no cloth*. Tough, elastic, adheres by the heat of the hand and endures.

To seal cables against water and abrasion, No. 631 Paragon Tape is excellent. It is cotton cloth filled with asphalt compound. Does not obstruct the passage of varnish.

There's a G-E Tape for every purpose—varnished cambric, cotton, silk, paper, asbestos, mica, rubber and friction. A generation of General Electric experience is behind each one.

G-E Merchandise Distributors can supply you at once—or write Section M-2910, Merchandise Department, General Electrical Company, Bridgeport, Connecticut.

GENERAL  **ELECTRIC** 
INSULATING MATERIALS

MERCHANDISE DEPARTMENT • GENERAL ELECTRIC COMPANY • BRIDGEPORT, CONNECTICUT

Inland

ILLUMINATING GLASSWARE

LA SALLE! MODERNAIRE!—
worthy antecedents to a new and beautiful line of illuminating glassware for the home. Jobbers and contractor dealers know the splendid sales record made by the La Salle and the Modernaire. And now Inland's new units for the bedroom, bathroom, living-room, kitchen and reception hall offer a combination that spells increased business from residential markets.

Make it a point to see these splendid units and also see the La Salle with Crystal bottom and the Modernaire with its new and beautiful decoration.

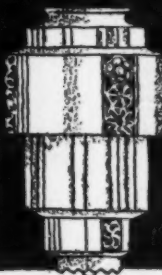
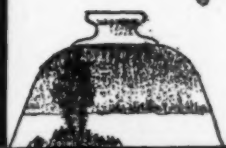


LA SALLE
With Crystal
Bottom



MODERNAIRE
With New
Decoration

INLAND GLASS WORKS, INC.
CHICAGO ILLINOIS



Switches

Switches

MOTOR STARTING SWITCHES

Manual Operated		T-V			
Series	Description	Amps	Volts	2 Pole	3 Pole 4 Pole
4151H1	Light Duty Motor Sw. 1/4 HP or Less	30	115	\$ 1.65	
9115H1	Motor Switch with Thermal Cutout	30	To 550	\$13.90	\$19.30
4231H	For infrequent Duty	30	220	6.85	9.75
4246H	For infrequent Duty 5 HP	30	220	12.55	16.65
4246H	For infrequent Duty 7 1/2 HP	30	440	19.65	23.65
4246H	For infrequent Duty 7 1/2 HP	60	220	17.30	26.85

SMALL ENTRANCE SWITCHES

Trumbull Electric Closed or Open Ends

Numbers	Amps.	Volts	Fusing	2 Pole	3 Pole
5790 EW Porc. Base	30	125	For 1 Plug Fuse	\$1.65	
5791-2-3-4 & 5893	30	125	Plug Fuses	1.85	\$3.45
5891-5892 Porc. Base	30	125-250	No Fuse-Slate Base	1.85	2.40
13640-13641 Kappa	30	250	For Enclosed Fuses	2.75	4.10
13642-43 & 13743 Kappa	30	250		2.75	4.35
13221-13321 Quick Break	30	250		3.55	5.20

"DO-ALL" MAIN ENTRANCE SWITCHES

Trumbull Electric Non Meter Test Solid End Wall

16361 to 16368	30	125-250	For Plug Fuses	\$2.70	\$3.45
16371 to 16378	30	"	Enclosed Fuses	3.05	3.75
16381 to 16388	60	250	"	8.45	8.90
16391 to 16398	100	250	"	15.05	15.95

"DO-ALL" METER SERVICE SWITCHES

Trumbull Electric For Meters Open End

16300 to 16309	30	125-250	For Plug Fuses	\$ 2.70	\$ 3.45
16315 to 16324	30	"	Enclosed Fuses	3.05	3.75
16330 to 16339	60	"	"	8.45	8.90
16341 to 16348	100	"	"	15.05	15.95

ACCESSIBLE FUSE METER SWITCHES

Trumbull Electric With Test Blades Without End Walls

18111	30	125	For 1 Plug Fuse	\$ 3.25	
18211-18311	30	125	Plug Fuses	3.70	\$4.20
18121	30	125-250	1 Enclosed Fuse	3.60	
18221-18321	30	"	Enclosed Fuses	4.45	4.45
18122-222-322	60	"	"	15.05	15.95
18123-223-323	100	"	"	23.85	25.60

Without End Walls and Without Test Blades

19111	30	125	For 1 Plug Fuse	\$ 3.05	
19211-19311	30	125-250	Plug Fuses	3.35	\$3.70
19121	30	"	1 Enclosed Fuse	3.60	
19221-19321	30	"	Enclosed Fuses	4.25	4.25
19122-222-322	60	"	"	14.15	15.05
19123-223-323	100	"	"	23.00	23.85

SEALED FUSE METER SWITCHES

Trumbull Electric With Test Blades Without End Walls

15827	30	125	For 1 Plug Fuse	\$ 2.20	
28111-28211-28311	30	125	Plug Fuses	3.25	\$ 3.45
28121	30	125	1 Enclosed Fuse	3.50	
28221-28321	30	125-250	Enclosed Fuses	3.75	4.00
28122-28222-28322	60	"	"	12.85	13.75
28123-223-323	100	"	"	21.25	23.00

Without Test Blades	30	125	For 1 Plug Fuse	\$ 2.85	
29111-29311	30	125-250	Plug Fuses	2.85	\$ 3.00
29121	30	125	1 Enclosed Fuse	3.15	
29221-29321	30	250	Enclosed Fuses	3.40	3.55
29122-222 & 322	60	250	Enclosed Fuses	12.00	12.90
29123-223 & 323	60	250	Enclosed Fuses	20.35	21.20

UNIVERSAL METER SERVICE SWITCHES

Trumbull Electric Without End Walls

#971-123	30	125	For 1 Plug Fuse	\$3.45	
972-123	30	125	For 1 Plug Fuse	4.30	
973-333	30	125	For 2 Plug " Solid Neu.	\$3.75	
975-333	30	125	For 3 Combinations	4.85	4.85
979-333	30	125	For 4 Combinations	4.85	4.85

POLYPHASE ENTRANCE & METER SWITCHES

Trumbull Electric

Series Nos.	Style	30 Amp.	60 Amp.
16379	Entrance—"DO-ALL"	3 Wire \$ 4.70	4 Wire \$ 4.70
15321-15623	Acc. Fuse—Test Conn.	11.60 \$15.60	\$21.10 \$37.00
17321-17623	Acc. Fuse without Test Conn.	10.95 12.80	19.40 22.00
26321-26623	Sealed Fuse with Test Conn.	11.50 14.40	17.60 33.50

Series Nos.	Style	100 Amp.
15321-15623	Acc. Fuse—Test Conn.	\$30.80 \$47.50
17321-17623	Acc. Fuse without Test Conn.	29.05 33.45
26321-26623	Sealed Fuse with Test Conn.	27.30 44.00

END WALLS, SHUTTERS, TROUGHS, ETC.

Trumbull Electric

End Wall One Piece for Standardized Switches	30 A.	60 A.	100 A.
End Wall One Piece for Polyphase Switches	\$.30	\$.70	\$.70
Shutters for End Walls for Standardized Switches	.40	1.00	1.15
Shutters for End Walls for Polyphase Switches	.15	.30	.30
Troughs 2-3" & 4" x 4"	\$.40	5" x 4" \$.45	6" x 4" \$.50 7" x 4" \$.55

Electrical Contracting, October, 1930

TYPE "A" SWITCHES

Trumbull Single Throw, Quick Make & Break

Amp	2 Pole AC-DC	3 Pole AC Only	2 Pole AC-DC	230 Volts—No Fuse
30	72221 \$10.95	72321 \$13.65	36221 \$ 9.60	
60	72222 13.65	72322 18.20	36222 13.30	
100	72223 20.95	72323 27.30	36223 20.00	
200	72224 36.40	72324 41.00	36224 25.50	

Trumbull "SNUF-ARC" TYPE

Amp	Fusible	2P. 230-575	3P. 230-575	No Fuse	2P. 575V	3P. 230-575
		AC & DC	AC Only	AC & DC	AC Only	AC Only
30	72261 \$16.40	72361 \$20.00		36261 \$12.75	* 36321 \$11.40	
60	72262 17.30	72362 21.00		36262 13.65	* 36362 15.95	
100	72263 27.30	72363 31.85		36263 20.95	* 36363 24.10	
200	72264 43.25	72364 52.80		36264 28.20	* 36364 34.60	

*230 V. AC, no "Snuf Arc"

TYPE "C" SWITCHES

Trumbull Single Throw, Quick Make & Break

Amp	2 Pole AC-DC	3 Pole AC Only	2 Pole AC-DC	230 V. No Fuse	3 Pole AC
30	40221 \$ 5.50	40321 \$ 6.85	20221 \$ 5.00	20321 \$ 6.40	
60	40222 8.20	40322 10.00	20222 8.20	20322 8.65	
100	40223 12.75	40323 15.50	20223 12.95	20323 13.30	
200	40224 20.00	40324 26.40	20224 19.10	20324 22.75	

Amp	Fusible	2P. 230	AC-DC	3 Pole	230 V. AC	3 Pole	Blades	4 Pole	Blades
60	44222 \$ 8.65	44322 \$10.50		43322 \$ 9.55	43422 \$11.85				
100	44223 13.20	44323 15.95		43323 15.00	43423 20.95				
200	44224 20.50	44324 26.85		43324 23.20	43424 32.30				

WESTINGHOUSE

ALL 30 AMP. PORCELAIN BASE

"Midget"—S. N.—1 Blade—1 Fuse—#62612 & #62613	2 Pole	3 Pole
"Type 00" Fusible—125-250 V.—Plug Fuses. 60969	1.65	* 60961 \$3.00
"S. N.—2 Blades—2 Fuses. 60991	1.65	62328 2.70
"S. N. 3 Blades—2 Fuses. 60991	2.55	60962 3.00
"Not Fusible—2 Blades—250 Volt. 60990	2.55	62352 2.70
"Fusible Cart. Fuses—250 V.—60989	2.45	62365 4.00
"S. N. 250 V.—3 Blades—2 Fuses. 60989	2.45	62363 4.30
"S. N. 250 V.—3 Blades—2 Fuses. 60989	2.45	62351 3.20
"Type WK-45" Fusible Cart. Fuses—3		62364 4.30
Blades—250 V.—3 Blades—2 Fuses. 545101		5.20
"Type WK-45" S. N. Fusible Cart. Fuses—2 & 3 Blades—250 V.—545301		5.20
"Type WK-45" Non-Fusible—2 and 3 Pole—3 Blades—545001		4.20 545001 4.20

TYPE C METER ENTRANCE

Westinghouse "WK-62" Quick Break

60 Amp.—230 Volts.	2 Pole Fusible	3 Pole Fusible	4 Pole Fusible
62304	\$ 9.15	62305 \$10.90	62307 \$13.60
62308	13.60	62309 17.25	62311 29.05
62312	21.80	62313 29.05	62315 47.20

SOLID NEUTRAL FUSIBLE

60 Amp.—3 Poles	2 Blades—2 Fuses	3 Blades—2 Fuses
62332	\$ 9.15	62306 \$10.90
62330	14.55	62310 17.25
62331	22.70	62314 29.05

UNIVERSAL METER SERVICE SEALED MAIN FUSES

Westinghouse "WK-57" Meter Testing

One & Two Circuit	40 Amp.	60 Amp.	Four Circuit
57924 \$3.70			57925 \$5.00
57926 4.05			57929 4.60
57928-31 3.60			57928 3.60
57498 5.25			57500 5.25

STANDARDIZED METER SWITCHES

Westinghouse "WK-54" Without End Walls

Amps.	Fused For Plug	Dead Fuse Type				Live Fuse Type			
		2 Pole		3 Pole		2 Pole		3 Pole	
		No.	Price	No.	Price	No.	Price	No.	Price
30		61140	\$ 2.40			60224	\$ 2.95	59442	\$ 3.70
30		61143	3.50	61142	\$ 3.75	59441	2.95	60225	3.70
30	Enclosed	61139			3.30	54371	3.30	60227	4.05
30		61145	4.10					59448	.05
60		61150	12.80	61151	13.65	59461	8.40	60229	8.85
100		61152	21.10	61153	22.80	59463	14.95	60232	15.90

METER SERVICE AND ENTRANCE SWITCHES

ACCESSIBLE FUSE TYPE

Westinghouse "WK-65"

Amps.	Fused For Plug *	With Test Facilities				Without Test Facilities			
		2 Pole		3 Pole		2 Pole		3 Pole	
30		No. 65000	Price \$ 3.50	No. 65002	Price \$ 4.35	No. 65010	Price \$ 3.30	No. 65012	Price \$ 4.00
30		65001	4.00	65004	4.85	65011	3.65	65013	4.00
30	Enclosed	65055	3.90	65003	3.90	65014	4.60	65015	14.10
30	"	65003	4.85	65004	4.85	65013	4.60	65016	14.95
60	"	65005	14.95	65006	15.85	65015	14.10	65018	23.70
100	"	65007	23.70	65008	25.45	65017	22.80		

POLYPHASE METER SWITCHES

Westinghouse "WK-54"—Sealed Main Fuses

30 Amp.	#60266—3 Pole—230 Volt AC—Less End Wall	\$11.00
60	60267—3 " 230	16.70
100	60268—3 " 230	26.30

Switches

	Meter Test	3Phase 4W.-S.N.	Non-Meter Test
30 Amp—Less End Walls..	65100 \$11.00	65143 \$15.00	65103 \$10.40
60 " " " " " "	65101 20.20	65146 35.95	65104 18.45
100 " " " " " "	65102 29.80	65141 46.45	65105 28.05

For Meter Switches

One Piece Meter Trims.....	30 Amp. 60 & 100 Amp.
Blank End Wall or Shutter Type End Wall.....	\$0.35 \$0.80
Shutter Type Meter Trim or Adapter Trim.....	.35 .80
New Universal Trim with Slide.....	.15 .30
Replacement Plate or Adapting Plate.....	.35
Wiring Trough 2-3 & 4" long. 40c-5", 45c-6", 50c-7", 55c-8", 60c.	.15
Fuse Receptacle #R57232.....	.15
..... Less Fuses.....	\$1.25

Westinghouse "WK-66"—Quick Make & Break

Amps.	250 V., DC—230 V. AC—Fusible	600 V., DC—575 V. AC—Fusible
30	666100 \$10.90	660200 \$16.35
30-60	661003 13.60	660123 18.90
100	661006 20.90	660226 27.25
200	661009 36.30	660300 52.60

Amps.	250 V., DC—230 V. AC—Non-Fusible	600 V., DC—575 V. AC—Non-Fusible
30	660122 \$9.55	660128 \$11.35
30-60	660447 13.60	660448 16.35
100	660506 20.90	660507 24.50
200	660509 36.30	660601 52.60

Westinghouse "WK-97"—Quick Make & Break

250 V. DC—230 V.A.C.—Fusible					575 Volt AC—Fusible				
Amps.	2 Pole		3 Pole		3 Pole		4 Pole		
30	\$97100	\$ 5.45	\$97101	\$ 6.80	\$97151	\$10.90	\$97152	\$18.15	
60	\$97103	8.15	\$97104	10.00	\$97154	13.60	\$97155	19.95	
100	\$97106	12.70	\$97107	15.45	\$97157	21.80	\$97158	36.30	
200	\$97109	19.95	\$97110	26.30	\$97160	38.10	\$97161	51.75	

250 V. DC. & 230 V. AC—Non-Fus.					575 Volts AC—Non Fusible				
Amps.	2 Pole		3 Pole		3 Pole		4 Pole		
30	\$97010	\$ 5.00	\$97011	\$ 6.35	\$97054	\$10.90	\$97055	\$18.15	
60	\$97013	8.15	\$97014	8.60	\$97054	10.90	\$97055	18.15	
100	\$97016	12.70	\$97017	15.45	\$97057	21.80	\$97058	36.30	
200	\$97019	19.95	\$97020	22.70	\$97060	29.95	\$97061	48.85	

Noark Closed Ends

Number	Amp.	Volts	Fused For	2 Pole	3 Pole
8283-8383-8393	30	125	Plug Fuses.....	\$ 1.65	\$ 2.50
8683-8693	30	125	N.E.C. Quick Break.	1.80	3.20
8226-1-8136-1	60	250	" " " "	6.65	7.25
8221-1-8131-1	100	250	" " " "	10.25	11.90

Noark Sealed Service SECO Without End Walls

Number	Amp.	Volts	Fused For	Pole	Pole
9993	30	125	Plug Fuses.....	\$ 2.40	
9543-53-23	30	125		3.50	\$ 3.75
9563-9533	30	250	Enclosed Fuses.....	4.10	4.30
9573	30	125	" " " "		3.80
66576	60	230	" " " "		11.90
66566-536	60	230	" " " "		16.80
66561-71-31	100	250	" " " "		21.00
			" " " "		23.85

Noark Meter Service & Entrance ACCO Without End Walls

Amps.	Fused	Meter Service Test Type				Entrance Non Test			
		2 Pole		3 Pole		2 Pole		3 Pole	
	For	No.	Price	No.	Price	No.	Price	No.	Price
30A	Plug...	9343	\$ 3.55			8343	\$ 3.30		
30A	"	9353	4.00	9323	4.50	8353	3.65	8323	4.00
30A	Enc.	9363	4.85	9333	4.85	8363	4.60	8333	4.60
30A	"	9373	3.90			8373	3.90		
100A	"	66306	11.95			76306	11.95		
100A	"	66361	23.70	66331	25.45	76361	22.85	76331	23.70

Noark Universal Meter Service Switches

	No. 971123	—Without End Walls.....	\$3.75
	* 9723	" " " "	5.00
For Detailed	* 972123	" " " "	4.65
Description,	* 973333	" " " "	4.05
see Noark Catalog	* 9753 & 9793	" " " "	5.65
	* 975333-979333	" " " "	5.25

Noark Doall Without End Plate

Amps.	Fused For	2 Pole Numbers	Price	3 Pole Numbers	Price
30A	Plug.....	913123-911123	\$ 2.95	912333-914333	\$ 3.75
30A	Enclosed.....	921223	3.30	922333-924333	4.00
60A	".....	921226	8.40	925336	8.90
100A	".....	921221	14.95	925331	15.80

Noark Fusible—Quick Break

250 Volts Fusible		500 Volts AC Fusible		
Amps.	2 Pole	3 Pole	2 Pole	3 Pole
30	\$222 \$ 2.70	\$223 \$ 4.30	\$423 \$ 9.00	\$433 \$10.90
60	\$222 \$ 5.10	\$223 \$ 9.60	\$423 \$ 16.00	\$433 \$18.60
100	\$221 \$12.60	\$221 \$15.30	\$421 \$14.40	\$431 \$17.80
200	\$222 \$19.80	\$222 \$26.10	\$422 \$28.80	\$432 \$38.20
400	\$224 \$48.60	\$224 \$66.60		

Amps.		Voits		2 Pole		3 Pole		4 Pole	
		No.	Price	No.	Price	No.	Price	No.	Price
30	250	8723	\$ 2.70	8733	\$ 4.06	8743	\$ 8.10		
30	500 AC	8623	7.65	8633	8.10	8643	10.80		
30	500	8623	8.10	8636	10.80	8646	18.20		
100	250-500	8621	10.80	8631	10.80	8641	27.30		
200	250-500	8622	18.90	8632	29.10	8642	42.75		
400	250-500	8624	39.60	8634	54.00	8644	82.40		

Single Piece End Wall for 30 Amp. Switches.....	\$.30	For 60 & 100 Amp.....	\$.80
Shutter for15	60 & 100 Amp.....	.30
Universal End Wall No. 909103.....	.40		
Blanking Side No. 908103-908203.....	.15		
Trough—3-4 & 5' 4.40—6' 4.45—7'.....	.50	8'—	\$.55—6'..... .80
Cabinet Fuse Block No. 902413.....	1.25		

Noark Switches Without End Walls

125-250 Volts					
		Main Entrance			
		"Doall" & 3 Wire	"Acco" Quad Break	"Seco" Quad Break	
Amps.	No.	Price	Accessible Fuses	Scaled Fuses	Price
30A.....	851233	\$ 4.70	77033	\$10.50	77533 \$10.40
60A.....	851236	11.70	77036	18.60	77536 15.05
100A.....	851231	19.30	77031	28.25	77531 24.75
Meter Service					
30A.....	931233	\$11.65	67033	\$11.15	67533 \$11.05
60A.....	931236	18.45	67036	30.35	67536 18.80
100A.....	931231	29.15	67031	30.00	67531 29.50

Noark Doall Without End Walls

Amps.	Fused For	2 Pole		3 Pole	
		Numbers	Price	Numbers	Price
30	Plug Fuses	813123-811123	\$ 2.70	812333-814333	\$ 3.45
30	Enclosed Fuses	853123-851223	3.75	853333-854333	4.30
60	"	853126-851226	8.45	855336	8.90
100	"	853121-851221	15.05	855331	15.95

Noark Fusible—Quick Break

Amps.	Volts	3 Pole-3 Poles		4 Pole-3 Poles		5 Pole-4 Poles	
		No.	Price	No.	Price	No.	Price
30	125-250	8133	\$ 3.15	8143	\$ 8.10	8153	\$ 9.00
60	" "	8136	9.00	8146	11.25	8156	19.50
100	" "	8131	14.40	8141	19.50	8151	35.50
200	" "	8132	22.50	8142	31.50	8152	50.40
400	" "	8134	63.00	8144	81.00	8154	120.00

Toggle Type—Quick Make & Break

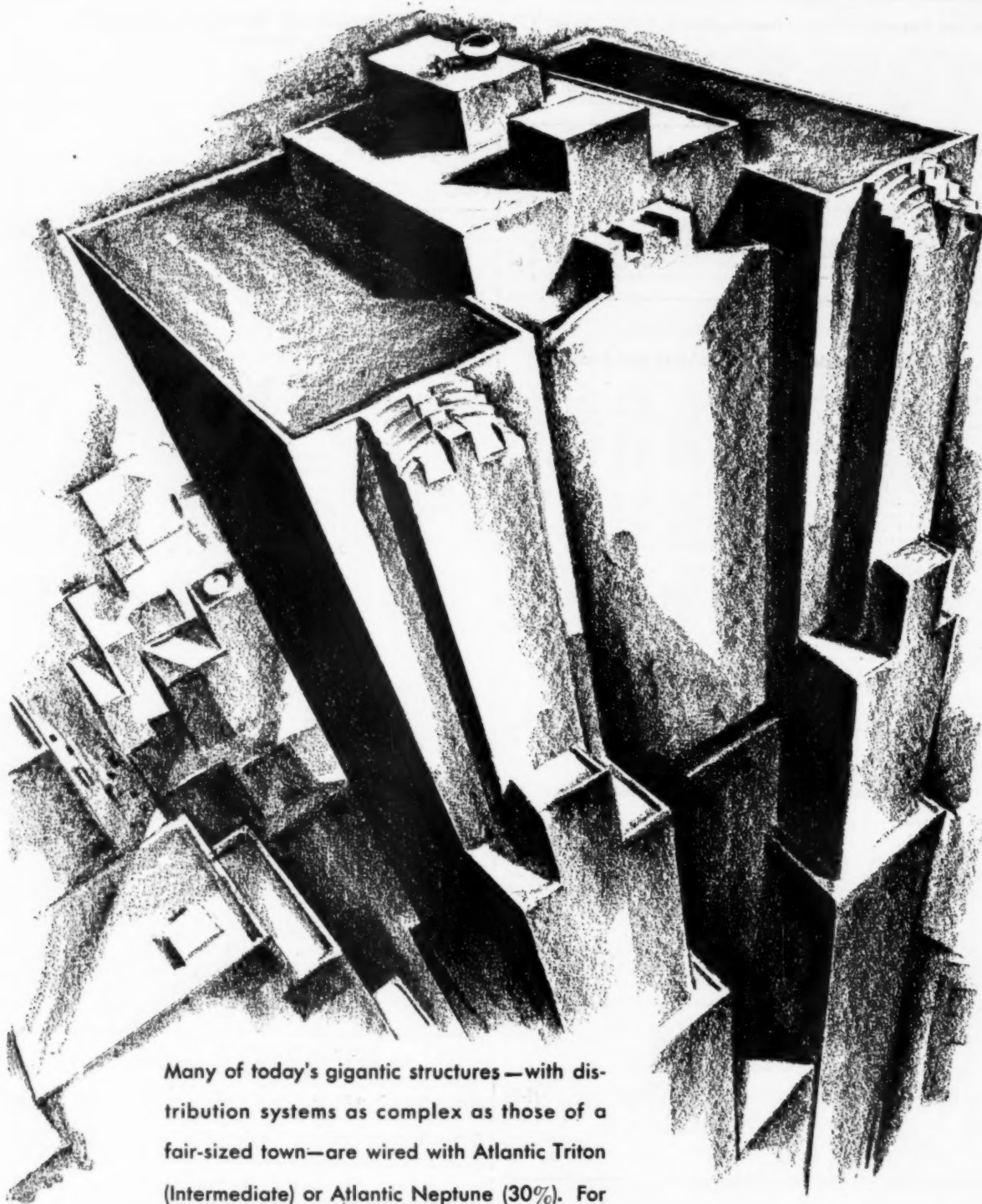
30 Amp. Switches		
125 Volt—2 Pole—One Blade—	#02211 & T-82211	\$1.80
125 — — — — — Two —	Plug Fuse Connection #00211	4.55
125 — — — — — Three —	90311	5.00
125-250 Volts—3 Pole—2 Blades—Solid Neutral	#02311	5.00
125-250 — — — — — — —	91311	7.25
250 Volts—2 Pole—One Blade—	#02221	1.80
250 — — — — — Two —	2 Fuse Connector #00221	5.45
230 — — — — — Three —	90321	8.20
250 — — — — — — —	Solid Neutral 91321	7.75
575 — — — — — AC 3 —	3 Fuse Connector 90351	12.75
575 Volts—Not Fusible—2 Pole	#03261	5.45
600 — — — — — — —	9331R	10.25
600 — — — — — — —	93351R	10.95
Motor Starting Switches #81321—81321V		9.15

Quick Make & Break

Single Throw		Fusible		Type "C"	
Amps		250 Volts DC—230 Volts AC		575 Volts AC	
		3 Pole	4 Pole	3 Pole	4 Pole
30 A. Porc. Base.	50221S	3.20	50321S	5.15	Equipped with Arc Chokers
30 A. End Plates.	50221P	3.20	50321P	5.15	
30 A. Slate Base.	50221	5.40		50351	\$10.90 50451 \$18.15
60 A. " "	50222	8.20	50322	10.00	50352 13.60 50452 20.00
100 A. " "	50223	12.70	50323	15.40	50353 21.80 50453 36.30
200 A. " "	50224	20.00	50324	25.00	50354 38.10 50454 51.70
400 A. " "	50225	49.00	50325	57.15	

	3 Pole 2 Blades 2 Fuse Holders	4 Pole 3 Blades 3 Fuse Holders	5 Pole 4 Blades 4 Fuse Holders
Solid Neutral Blades Omitted	230 V.-A.C. & DC	115-230 V.-A.C.	115-230 V.-A.C.
x 30 Amp. Type C . . .	\$2311P \$ 2.50		
30 " " " " " "	\$2321P 3.20	\$2421 \$ 6.40	\$2521 \$ 12.75
60 " " " " " "	\$2322 9.10	\$2422 11.40	\$2522 20.00
100 " " " " " "	\$2323 14.60	\$2423 30.50	\$2523 36.00
200 " " " " " "	\$2324 21.20	\$2424 31.50	\$2524 52.50
400 " " " " " "	\$2325 33.75	\$2425 82.00	\$2525 122.00

*This Switch for 125 Volts. Ed. Plug Fusible.

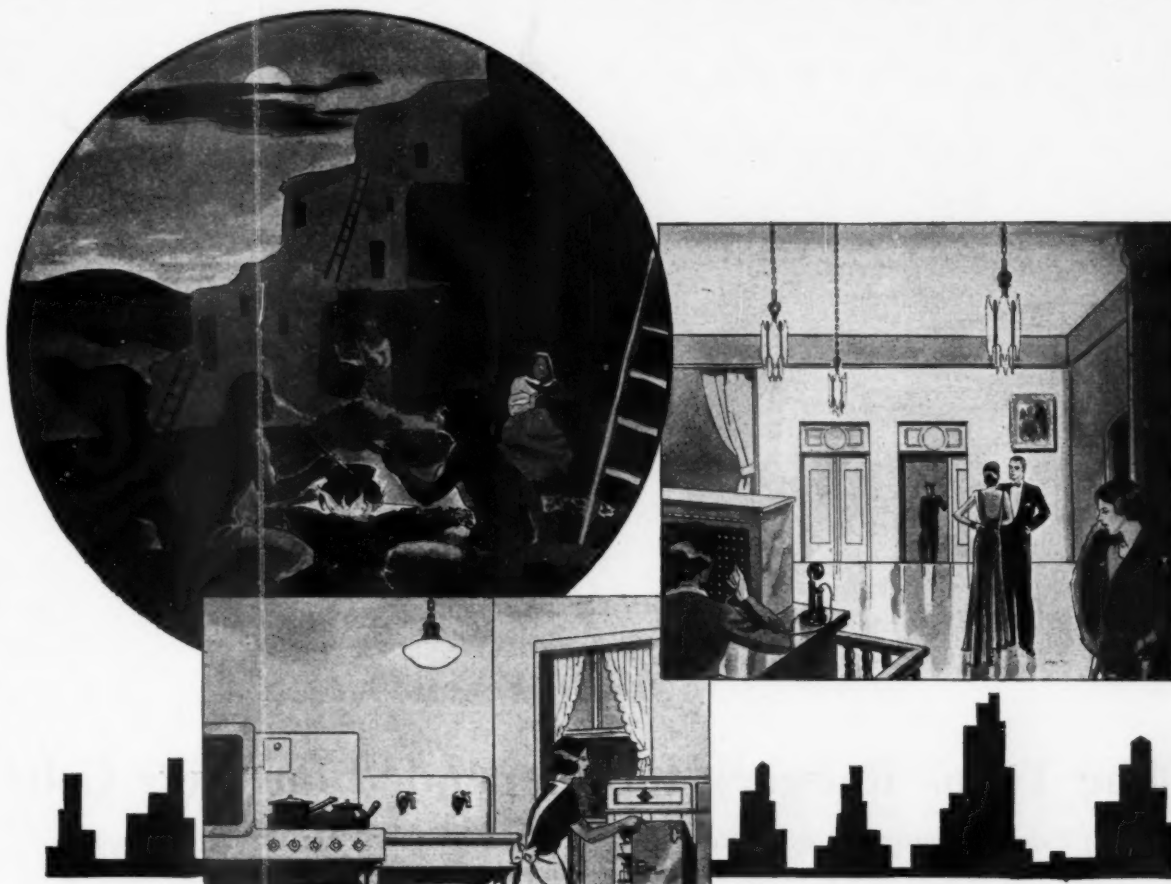


Many of today's gigantic structures—with distribution systems as complex as those of a fair-sized town—are wired with Atlantic Triton (Intermediate) or Atlantic Neptune (30%). For in the judgment of leading architects and engineers proved quality foretells performance.

GENERAL CABLE CORPORATION

EXECUTIVE OFFICES: 420 LEXINGTON AVENUE, NEW YORK • OFFICES IN PRINCIPAL CITIES





CLIFF DWELLERS STILL— *But What a Difference in Convenience!*

THE element of protection from beast and enemy plays no part in the modern apartment structure as it did with the well-known cliff dwellers, but the scheme of close quarter community living is much the same. There is a vast difference though in the mode of living.

Tenants of today's large apartment dwellings enter the immaculate, airy, brilliantly lighted foyers—are whisked skyward in electric elevators—enter their homes, lighted, cleaned and ventilated by means of electricity—switch on the electric radios—perhaps investigate the contents of the electric refrigerators—cook on the electric stoves, topping off perhaps with the products of electric toasters, percolators, waffle irons, chafing dishes—and even have available devices for helping in shaving, hairdressing and like activities. With the lift of a receiver, they talk to people anywhere and at will. With the touch of a button or switch they control lights to suit their convenience—

And all these applications of electricity are made possible by devices carefully selected and installed by architects, owners, builders and contractors—more often than not Bryant "Superior Wiring Devices."



N4832



No. HF

E-10

THE BRYANT ELECTRIC COMPANY

BRIDGEPORT

BOSTON • CHICAGO • NEW YORK

50 High Street

844 West Adams Street

60 East 42nd Street



CONNECTICUT, U.S.A.

PHILADELPHIA • SAN FRANCISCO

1333 Chestnut Street

149 New Montgomery Street

MANUFACTURERS OF "SUPERIOR WIRING DEVICES" SINCE 1888—MANUFACTURERS OF HEMCO PRODUCTS



The Texas Rangers, too, depended on their Colts

At Palo Alto, at the battle of Resaca de la Palma and in scores of tight places, the famous Texas Rangers drew their Colts. In the days when a Ranger slept with his head on a piece of hard beef to keep the wolves from getting it, the faithful Colt served him well. Captain McCulloch's Rangers gave battle with the Colt under General Taylor at Monterey, in 1846—and the Texas Rangers were the first semi-military policing body to adopt the Colt for their arm.

Fact and fiction would be lost without the Colt and the needed protection it offered. To the electrical industry,

Colt offers protection to electrical equipment—just as real as the Colt held in the hand of a Texas Ranger. NOARK, that famous line of safety switches and meter protective devices, is a member of the Colt family, ably supporting a great tradition and carrying out the Colt policy of concentrating on the manufacture of things mechanical. To this policy are geared men who are specialists in watch-like methods of precision, modern machinery and advanced engineering thinking. When you install any NOARK protective device you are installing a Colt product.

COLT
NOARK

COLT'S PATENT FIRE ARMS MFG. CO.,
Established 1836

Electrical Division, HARTFORD, CONN., U.S.A.
Electrical Division 1886

ELECTRICAL MEN, TOO, DEPEND

Safety Switches—QuadBreak, Nublade, and Motor Starting, Meter Service, Entrance Switches and accessories, fuses and cutouts, Cast Iron Service and Fuse Boxes, Underground Distribution Boxes,



ON COLT-NOARK PRODUCTS

and Moulded Line material all NOARK, all Colt products.

Send for Catalog "G" and detailed description.

"The Rampant Colt," an interesting publication, mailed on request.

THEY KEEP A-RUNNING



10 Horse Power Century Type SC Multi-speed Constant Torque Squirrel Cage Induction 3 and 2 Phase Motor

TOTALLY ENCLOSED FAN COOLED MULTI-SPEED MOTORS

Constant Horse Power • Constant Torque • Variable Torque

These Multi-Speed Squirrel Cage Motors have the added advantage of full protection to the winding, armature and other internal parts of the motor, all of which are completely isolated from the outside air. They are particularly desirable in all installations where adjustable speed requirements must be met; and where dust, dirt, dampness and fumes are present in objectionable quantities, such as grain elevators, car loaders, conveyors, stokers, machine tools and similar equipment.

They are built for 2, 3 and 4 speeds, with wide or narrow speed ranges, such as 1800/1200 or 1800/600 down to 900/450 R. P. M. (60 cycle). Special speed combinations are available. Control may be manual, push button or automatic.

Built in standard sizes from $\frac{1}{4}$ to 125 horse power, in normal torque, high torque and normal or low starting current types.

CENTURY ELECTRIC COMPANY

1806 PINE STREET • ST. LOUIS, MO.

40 U. S. and Canadian Stock Points and More Than 75 Outside Thereof

SINGLE PHASE,
THREE PHASE,
AND DIRECT
CURRENT MOTORS

Century
MOTORS

MOTOR GENERA-
TOR SETS, ROTARY
CONVERTORS, FANS
AND VENTILATORS

FOR MORE THAN 26 YEARS AT ST. LOUIS

Wadsworth Switches—Continued

MAIN ENTRANCE SWITCHES—Continued

POLYPHASE							
Single Phase and D. C.	Amps.	Volts	Poles	Blades	Fuses	Neutral	Accessible Fuses
2230	30	250	3	3	3 NEC	None	\$10.40
1830	60	250	3	3	3	"	19.10
1930	100	250	3	3	3	"	28.70
4630	200	250	3	3	3	"	44.50
4830	400	250	3	3	3	"	101.00

METER SERVICE SWITCHES							
Single Phase and D. C.	Amps.	Volts	Poles	Blades	Fuses	Neutral	Accessible Fuses
1451	30	125	2	1	1 Plug	Solid	\$3.80
1412-1212	30	125	2	2	2	None	4.25
1423-1223	30	125-250	3	2	2	Solid	4.75
2251	30	125	2	1	1 NEC	"	4.15
212-2223	30	125 or 250	2 & 3	2	2	None & Solid	5.05
1851	60	125	2	1	1	Solid	14.75
1812-1842	60	125 or 250	2	2	2	None	15.65
1843	60	125-250	3	2	2	Solid	16.50
1951	100	125	2	1	1	"	24.35
1912-1942	100	125 or 250	2	2	2	None	24.35
1943	100	125-250	3	2	2	Solid	26.10
4643	200	125-250	3	2	2	"	51.75
4843	400	125-250	3	2	2	"	109.15

POLYPHASE							
Single Phase and D. C.	Amps.	Volts	Poles	Blades	Fuses	Neutral	Accessible Fuses
2234	30	250	3	3	3 NEC	None	\$11.25
1834	60	250	3	3	3	"	20.85
1934	100	250	3	3	3	"	30.45
4634	200	250	3	3	3	"	60.65
4834	400	250	3	3	3	"	129.35

CHANNEL BANKING TYPE

Volts	Poles	Blades	Fuses	Neutral	Access. Fuses	Price	No Test	Meter Service & Main Entrance
125	2	1	1 Plug	Solid	1451T	\$4.25	1450T	\$4.05
125-250	3	2	2	"	1423T	\$5.20	1403T	\$4.55
125	2	2	2	None	1412T	4.70	1402T	4.35
125	2	1	1 NEC	Solid	2251T	4.55	2250T	4.60
250	2	2	2	None	2212T	5.55	2202T	5.25
125-250	3	2	2	Solid	2223T	5.55	2203T	5.25

METER SERVICE SWITCHES							
Single Phase and D. C.	Amps.	Volts	Poles	Blades	Fuses	Neutral	Sealed Fuses
162	60	250	2	2	2 NEC	None	\$9.15
161	60	125-250	3	2	2	Solid	9.55
112	100	250	2	2	2	None	15.65
111	100	125-250	3	2	2	Solid	16.50

SERVICE FUSES DEAD WITH SWITCH OPEN

Number	Amps.	Volts	Poles	Blades	Fuses	Neutral	Price
38	30	125	2	1	1 Plug	Solid	\$2.65
238	30	125	2	1	1	"	4.00
X360	30	125	2	1	1	"	3.45
X362	30	125	2	1	1	"	4.45
272	30	125	2	2	2	None	4.30
271-292	30	125-250	3	2	2	Solid	4.30
2351	30	125	2	1	1 NEC	"	4.05
2312	30	250	2	2	2	None	4.35
2323	30	250	2	2	2	Solid	4.55
2051	60	125	2	1	1	"	12.60
2042	60	125 or 250	2	2	2	None	13.50
2043	60	125-250	3	2	2	Solid	14.35
2131	100	125	2	1	1	Solid	21.75
2142	100	125 or 250	2	2	2	None	21.75
2143	100	125-250	3	2	2	Solid	23.45
4743	200	125-250	3	2	2	"	44.45
4943	400	125-250	3	2	2	None	101.00

POLYPHASE							
Single Phase and D. C.	Amps.	Volts	Poles	Blades	Fuses	Neutral	Price
2334	30	250	3	3	3 NEC	None	\$9.85
2034	60	250	3	3	3	"	17.40
2134	100	250	3	3	3	"	26.95
4734	200	250	3	3	3	"	49.75
4934	400	250	3	3	3	"	113.00

MAIN ENTRANCE SWITCHES							
Single Phase and D. C.	Amps.	Volts	Poles	Blades	Fuses	Neutral	Price
172	60	250	2	2	2 NEC	None	\$9.15
171	60	125-250	3	2	2	Solid	9.30
102	100	250	2	2	2	None	15.65
110	100	125-250	3	2	2	Solid	16.50

POLYPHASE							
Single Phase and D. C.	Amps.	Volts	Poles	Blades	Fuses	Neutral	Price
2330	30	250	3	3	3 NEC	None	\$9.15
2030	60	250	3	3	3	"	15.60
2130	100	250	3	3	3	"	25.15

INDUSTRIAL TYPE SWITCHES

250 Volts	Amps.	Poles	Blades	Fuses	Access. Fuses	Sealed Fuses	Quick Make & Break
					Number	Price	Number
30	30	2	2	2	9532	\$13.65	8532
30	30	3	3	3	9533	15.50	8533
60	60	2	2	2	9562	14.65	8562
60	60	3	3	3	9563	18.55	8563
100	100	2	2	2	9512	25.00	8512
100	100	3	3	3	9513	28.80	8513

OUTDOOR METER SERVICE SWITCHES

30 Amp. 3 Pole Solid Neutral Outdoor or Weatherproof	\$15.10
60 " " " " " " " "	20.40

EXTRA END WALLS—SHUTTERS—TRIMS—ETC.

Wadsworth							
Type of Trim				Knock-Meter out & Shut-ter			
For 30 Amp. 125 Volt Switches	Flat	Extended	Shutter	Flat	Extended	Shutter	ter
" 30 " 250 " 2 Pole	\$.30	\$.50	\$.30	\$.30	\$.50	\$.30	\$.17
" 60 " 250 " 3 " "	.50	.65	.50	.35	.50	.35	.25
" 60 " 250 " 3 " "	.65	.85	.65	.45	.65	.45	.25
" 100 " 250 " 3 " "	.75	.90	.75	.50	.75	.50	.35
" 100 " 250 " 3 " "	.82	1.00	.82	.55	.82	.55	.40
" 100 " 250 " 3 " "	.90	1.10	.90	.60	.90	.60	.45
" 200 " 250 " 3 " "	1.00	1.15	1.00	.80	1.00	.80	.55
" 300 " 250 " 3 " "	1.10	1.25	1.10	.85	1.10	.85	.60

Murray Switches

ENTRANCE SWITCHES

30 Amp. Number	Volts	Description	With End Walls
630	125	1 Blade—1 Plug Fuse S. N.	2 Pole 3 Pole
231-230	125-250	2 " " "	1.70 \$2.40
641-2-6	125	For 1 HP—250 V.—AC & DC Motors	1.80
643	230	3 Blades 3 Cartridge Fuses	3.20
647	125-250	2 " " " S. N.	2.50
830	125-250	2 " " " Sealed Fuses S. N.	4.00
831	125-250	2 " " " 2 Plug Sealed Fuses S. N.	2.25

Accessible Main Fuses				With Branches Combined			
				Without End Walls			
780-782	125-250	2 Plug Fuses 2-2 Wire Branches	.....	\$5.80	\$6.80		
781-783	125-250	4 " " " " " "	.....	6.55	7.55		
784	125	2 " " " " " "	.....	6.60			
785	125	4 " " " " " "	.....	7.30			

ACCESSIBLE MAIN FUSE TYPE AA

				Without End Walls			
				Meter Test Type			
Amps.	Poles	Fused for	Neutral	No.	Price	No.	Price
30	2	1 Plug	Fused	755	\$3.25	754	\$3.05
30	2	1 Cart.	"	738	4.20	740	3.60
30	2	2 Plug	"	748	3.70	752	3.35
30	2	2 Cart.	"	737	4.50	757	4.25
30	3	2 Plug	Solid	756	4.20	753	3.70
30	3	2 Cart.	"	742	4.45	758	4.25
30	2	1 Plug	Fused	776	3.25	774	3.05
30	3	2 Plug	Solid	775	4.20	779	3.70
30	3	2 Cart.	"	777	4.45	778	4.25
60	2	1 Cart.	Fused	766	14.20	773	15.05
60	2	2 Cart.	"	764	15.05	782	14.20
60	3	2 Cart.	Solid	765	15.95	763	15.05
100	2	2 Cart.	Fused	709	23.85	708	22.10
100	2	2 Cart.	"	718	23.85	716	23.00
100	3	2 Cart.	Solid	719	25.60	717	23.85

x—Made with cover to permit sealing fuses independent of main cover.

POLYPHASE ENTRANCE & SERVICE

				With End Walls			
				3 Wire 4 Wire			
Entrance	Amps.	Not.	Description				
30	790-2	Three Legs Fused	.....	\$11.00	\$11.60		
60	760-9	Four Wire Solid Neutral	.....	19.40	20.00		
100	710-12	All 3 Pole 3 Phase	.....	29.05	29.95		
200	720-22	" " " " " "	.....	44.55	51.85		
Service							
30	791-3	Three Legs Fused	.....	\$11.60	\$15.60		
60	767-8	Four Wire Solid Neutral	.....	20.70	23.80		
100	711-14	All 3 Pole 3 Phase	.....	30.80	33.25		
200	721-23	" " " " " "	.....	51.85	90.75		

"UNISAFIT"

(Universal Standardized Switches)

All 30 Amps							
Number	Pole	Fuse	Neutral	2-Wire	2 Fuses	Branches & Fusing	Price
235B	2	Single	"	2-2-Wire	2	"	\$3.25
236	2	"	"	4-2- " "	2	"	4.30
237	3	Two	Solid	1-3- " "	2	"	3.75
237	3	"	"	1-2- " "	2	"	3.75
237	3	"	Solid	2-2- " "	2	"	3.75
238	3	"	"	4-2- " "	4	"	4.85
238	2	"	"	2-2- " "	4	"	4.85

METER SERVICE SWITCHES

				Sealed Fuses			
				Fuses & Blades Dead			
				Without End Walls			
Amps.	Volts	Description	No.	2 Pole	3 Pole	Price	
30	125	For Plug Fuses	232	\$2.20	233	\$3.35	
60	250	For Cart. Fuses	264	12.85	385	13.75	
60	250	For Cart. Fuses	368	12.75			
Fuses Alive							
30	125	For Plug Fuses	330-1	\$2.65	333	\$3.35	
30	250	For Cart. Fuses	130	2.65	133	3.35	
60	250	" " "	360	8.45	361-3	8.90	
100	250	" " "	310	15.05	313-4	15.95	

SEALABLE MAIN

FRICTION TAPE—Concluded

	Per Pound	Per Half Pound	Per 2 Ounce	Per 1 Ounce	Per Foot
Dutch Brand	\$.65	\$.35	\$.10	\$.05	\$.01
Everstick	.60	.30	.10	.05	.01
Eaco	.95	.50	.15	.10	.02
G. E.	.55	.30	.10	.05	.01
Grimshaw	2.00	1.00	.25	.15	.03
Holdfast	1.00	.50	.15	.10	.01
Holdfast U. S.	.55	.30	.10	.05	.01
I X L	.75	.40	.10	.05	.01
Illinois	.55	.30	.10	.05	.01
Johns Manville Armature	1.75	.90	.20	.10	.02
" " Iomanco	1.00	.55	.15	.10	.02
" " White	1.35	.70	.20	.10	.02
" " No. 3 Now No. 5	.55	.30	.10	.05	.01
" " No. 6 " 40	.50	.25	.10	.05	.01
Jaxon	.60	.30	.10	.05	.01
Leader	.70	.35	.10	.05	.01
Manson	1.25	.65	.20	.10	.02
Magnet	.75	.40	.10	.05	.01
O. K.	.60	.30	.10	.05	.01
P & B.	1.00	.50	.15	.10	.02
Paragon	1.65	.85	.20	.10	.02
Service	.90	.45	.15	.10	.02
Stanpat	.55	.30	.10	.05	.01
Sticks	.50	.25	.10	.05	.01
Security	.45	.25	.10	.05	.01
Vim Grav	.55	.30	.10	.05	.01
Victor	1.10	.60	.15	.10	.02

RUBBER TAPE

	Amazon Rubber	\$0.95	\$0.50	\$0.15	\$0.10	\$0.04
Alexall		1.20	.60	.15	.10	.04
Alpha		1.00	.50	.15	.10	.04
Brooklyn		.65	.35	.10	.05	.03
Clifton		.65	.35	.10	.05	.03
Dutch Brand		.65	.35	.10	.05	.03
Elesco		.60	.30	.10	.05	.03
G. E.		.55	.30	.10	.05	.03
Graybar Victor		.55	.30	.10	.05	.03
Holdfast		1.00	.50	.15	.10	.04
Imperial		.60	.30	.10	.05	.03
Illinois		.60	.30	.10	.05	.03
Okonite		1.50	.80	.20	.10	.04
Papa		.75	.40	.10	.05	.03
Pittsburgh		.55	.30	.10	.05	.03
Relio U. S.		.50	.25	.10	.05	.03
Security		.55	.30	.10	.05	.03
U. S. Rubber		.65	.35	.10	.05	.03
Twin Tape Rubber & Friction		.75	.40	.10	.05	.03
USCO Westinghouse		.90	.50	.15	.10	.04

COUCH TELEPHONES

VESTIBULE TYPE

No. 74 Armored Cord Receiver Type	\$25.00
No. 74A Swing Arm Receiver Type	\$37.30
No. 74C Cordless Loud Speaker Type	\$0.75
Above prices are for telephones complete but do not include for any call buttons.	
Add for buttons—Janitor Calling Buttons if fitted	\$.95
Add for Each Suite Calling Button	.95

SUITE TELEPHONES

Series 2809 to 2940 or 1909 to 49	Page 22 Bulletin No. 89 S. H. Couch Co.
Number of Buttons	0 1 2 3 4
Price Ea. Surface or Flush	\$11.40 \$11.40 \$12.45 \$13.60 \$14.60

TELEPHONE CABLES

Number of Conductors	Braided Type "B"	Lead Covered Type "L"
	Number Price per Foot	Number Price per Foot
8	B-8 \$.14	L-8 \$.18
12	B-12 .15 1/4	L-12 .21
16	B-16 .18	L-16 .27
21	B-21 .22	L-21 .29
25	B-25 .24	L-25 .32
31	B-31 .27	L-31 .39
37	B-37 .30	L-37 .44

TIME SWITCHES

GENERAL ELECTRIC TIME SWITCHES

Type	Cat. No.	Price	Type	Cat. No.	Price
15 Amp. Indoor Service			20 Amp. In or Outdoor Service		
Single Pole	110 V. 220 V.		Double Pole	110 V. 220 V.	
T-8-B1 30x458 to 471	\$22.00	\$23.00	60 Cycle 10x637 & 38	\$44.00	\$45.00
T-8-B2 30x460 to 473	22.00	23.00	50 10x639 & 40	41.00	42.00
T-8-B3 30x462 to 475	22.00	23.00	Extra for Cutouts	4.00	4.00

HARTFORD TIME SWITCHES

Type	B Single or Double Pole	10 Amp.	20 Amp.	35 Amp.	50 Amp.
B Triple Pole		\$35.00	\$39.00	\$42.00	\$50.00
C & D Single or Double Pole		38.00	41.00	45.00	
C & D Triple Pole		39.00	42.00	47.00	52.00
G Apt. Hall Light Control D. P.		41.00	45.00	49.00	
		38.00		60.00	

HORELECTRIC TIME SWITCHES

60 Amp. D. P. Eight Day Time Switch and Box	\$24.00
Automatic Electric Time Switch with Automatic Electric Time Motor and Box	32.00
Eight Day Time Motor	12.00
Automatic Electric Time Motor	20.00

RELIANCE & RACINE SWITCHES

	10 Amp.	20 Amp.	30 Amp.	50 Amp.
Racine Type 1R-2R	\$19.50	\$23.00		
Reliance Type 10-20-30-50	28.00	30.00	\$32.00	\$36.00
Reliance Type 15 Triple Pole		32.00		
Apartment House Types A-B-C-D-E-F-G	30.00	30.00		

SANGAMO TIME SWITCHES

All 20 Amp. 115 V.—15 Amp. 230 V.	A. C.	D. C.	D. C.
T or TC 1 Single Pole Single Throw	115-230V	115 Volt	230 Volt
T TC 1 " Double " "		\$40.00	\$45.00
T TC 2 Double " Single " "		42.50	47.50
T TC 2 " Double " "		45.00	50.00
		47.50	52.50
			55.00

SAUTER TIME SWITCHES

No.	Amps.	All 115-230 Volt A. C. & D. C. Single Throw.	Description	Price
101	2	1	Clock operated, key wound 40 day clocks	\$2.00
111	10	1	" " " " 40 " "	56.00
121	15	2	" " " " 40 " "	60.00
201	2	1	Self winding	74.00
211	10	1	" " " "	80.00
221	10	2	" " " "	85.00
321	25	2	Motor operated self winding clocks	105.00
341	40	2	" " " "	110.00
401	100	2	Motor operated Oil Break self winding clocks	190.00
431	200	2	" " " "	250.00
461	300	2	" " " "	280.00

TORK TIME SWITCHES OR CLOCKS

Single Pole	Description	Indoor	Outdoor	Switchboard
15 Amp. 125 Volt		#115H \$20.00	#215H \$27.50	#015H \$17.50
30 " 250 "		#130H 25.00	#230H 32.50	#030H 22.50
Double " Double Throw		#166H 25.00	#266H 32.50	#066H 22.50

Contactor and Clock Combination

#76062-60 Amp. 2 Pole AC..	\$50.00	#75062-60 Amp. 2 Pole DC..	\$70.00
#76102-100 " AC..	\$50.00	#75102-100 " DC..	\$125.00

ZENITH TIME SWITCHES

Model #110—8 Day	10 Amp.	20 Amp.	30 Amp.	60 Amp.	100 Amp.	200 Amp.
Electric Wound—AC	\$20.00	\$23.00	\$25.00			
—DC		40.00				
Astronomic Dial—AC	79.00					
—DC	84.00					
Remote Con. Swhs.—AC		16.50	\$22.50	\$42.50	\$75.00	
—DC		23.50	38.00	55.00	93.00	

TRANSFORMERS

BELL & TOY TRANSFORMERS

Name	Style	Watt	Secondary Volts	No.	Price	25 to 40 Cycle	No.	Price
Steel Clad Bell	25 Single	80	\$1.25					
Porcelain Bell	25 Single	80T	1.55					
Out. Box Bell	25 Single	87	1.55					
Heavy Duty	50 8-16-24	86ER	1.55					
ED-WARDS	" " 100		88	4.25				
" " 75			89	6.40				
" " 100			90	7.40				
" " 50 3 to 18			870	3.50				
" " 75 3 to 24			871	5.85				
" " 100 2 to 30			872	8.75				
Bell Residence	12 Volt	2332	1.00	192340	1.45			
G. E. Box Type	12 " "	2488	1.40	2490	1.75			
Heavy Duty	50 8-16-24	2333	4.85	2339	7.00			
" " 100 10-20-30		2334	6.95	2340	11.20			
Wizard	25 10 Volt	230-101	1.00	230-102	1.15			
Nucode	25 10 Volt	230-111	1.40	230-112	1.65			
Tri-Volt	25 6 to 18V.	230-121	1.40	230-122	1.65			
Porcelain	50 5-14-13	230-131	1.40					
Little Jeff Toy	75 5-14-13	535-101	3.05	535-102	4.30			
Midsize Toy	100 5-14-22	535-121	4.45	535-122	5.50			
JEF-Model 2 Toy	75 5-14-23	535-131	6.75	535-132	8.40			
Model 3 Toy	150 1-30	535-141	8.65					
Heavy Duty A	50 6 to 20	231-101	5.10	231-102	7.25			
" " B	75 6 to 20	231-111	7.70	231-112	10.30			
" " G	100 6 to 24	231-171	8.90	231-172	10.00			
" " E	250 8 to 24	231-141	21.00	231-142	26.40			
Blue Bell	10 8 Volt	6166	1.00					
Tri-Volt	20 6 to 16	6163	1.40					
Box Type	10 8 Volt	7166	1.40					
KIL- Porcelain Case	10 8 Volt	4166	1.40					
LARK "Black Bell"—H. D.	50 6-14-20 V.	816-50	5.00					
" " 75 6-14-20 V.	816-75	7.50						
" " 100 6-12-18-24	916-100	8.90						
"Box Bell" in Box	10 8 Volt	9166	2.30					
Mold. Single	25 10 Volts	221	1.40					
Mold. 3 Circuit	25 6 to 18V.	222	1.85					
Steel Sgle. Cir.	25 10 Volts	223	1.25	235	1.35			
Steel 3 Circuit	25 6 to 18V.	226	1.40					
Cov. Type Sgle. Cir.	25 10 Volts	227	1.40	237	1.55			
Cov. Type 3 Cir.	25 6 to 18V.	228	1.55					
Porcelain Clad	25 Single	300D1	\$1.65	201G1	\$2.10			
" " 15 Single	203D1	2.10	204G1	2.55				
Steel	15 Single	205S	1.25	206SG	1.40			
" " 15 6-9-15	207S	1.45	208SG	1.75				
Heavy Duty Porc.	50 6-12-18	209HD1	6.45	210HE1	7.20			
" " 100 8-16-24	212EHD	7.75	213EHE	10.30				
Steel Clad "A"	50 6-12-18	300A	6.20	301A	6.75			
" " "B"	100 6-12-18-24	302B	9.25	303B	10.75			
" " "C"	200 6-12-18-24	304C	17.50	305C	20.65			
" " "E"	300 6-12-18-24	306E	21.45	307E	25.75			
" " "F"	500 6-12-18-24	308F	29.90	309F	36.00			
STAN-LEY	TB H'vy Duty 50 8-16-24	501	4.25	502	4.75			
PATTER-SON	TB H'vy Duty 75 8-16-24	751	6.40	752	7.00			
" " TB H'vy Duty 100 8-16-24	1001	7.40	1002	8.15				
" " TB H'vy Duty 150 8-16-24	1501	9.10	1502	10.00				

NOTE: For 220 Volt Transformers add 20% to above prices

Wires

Wires

WIRES

NEW CODE RUBBER COVERED WIRES

Special Price on No. 14 S.B. Wire

In less than Coil Lots.....	Per Foot	\$.01½
In Coil Lots.....	Per Foot	.01

Other Sizes		No. 18	No. 16	No. 14
Fixture Wire Light.....	Price Per Foot	\$.01	\$.01½	
" Heavy.....		.01½	.01½	
Solid Single Braid.....		.01	.01½	See Above
" Double.....		.01½	.01½	.01½
Stranded Sgl. Braid.....		.01½	.01½	.01½
" Dble.....				.01½
Duplex Single Braid.....				.03
" Double.....				.04

Other Sizes		No. 12	No. 10	No. 8	No. 6
Fixture Wire Light.....	Price Per Foot				
" Heavy.....					
Solid Single Braid.....		\$.01½	\$.02	.03	\$.04½
" Double.....		.02	.02½	.04	.05
Stranded Sgl. Braid.....		.02	.02½	.04	.05
" Dble.....		.02½	.03	.04½	.05½
Duplex Single Braid.....		.04	.04½	.07	.10
" Double.....		.05	.06	.09	.11

LARGER SIZES DOUBLE BRAID STRANDED

Size	Price Per Foot	Size	Price Per Foot
No. 8 D. B.....	\$.04½	No. 0.....	\$0.17
No. 6 D. B.....	.05½	No. 00.....	.20
No. 4 D. B.....	.07	No. 000.....	.24
No. 3 D. B.....	.08½	No. 0000.....	.30
No. 2 D. B.....	.10	250,000.....	.35
No. 1 D. B.....	.14		

CIRCULAR MILL CABLE

Size	Price Per Foot	Size	Price Per Foot
300,000 C. M.....	\$0.40	700,000 C. M.....	\$0.90
350,000 C. M.....	.46	750,000 C. M.....	1.95
400,000 C. M.....	.51	800,000 C. M.....	1.00
450,000 C. M.....	.57	900,000 C. M.....	1.10
500,000 C. M.....	.63	1,000,000 C. M.....	1.25
600,000 C. M.....	.76		

Additions to Code Wire for 25% (Intermediate Grade) and 30% Wire.		For Intermediate or 25% Wire	For 30% Wire
Sizes		5%	10%
From No. 14 to No. 1.....		3%	6%
From No. 1.0 to 4.0.....		2%	5%
From 250,000 to 400,000 CM.....		1½%	3%
From 500,000 to 1,000,000 CM.....			

WEATHERPROOF WIRE

Triple Braid

Price		No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Per Pound Solid.....		\$.60	\$.56	\$.52	\$.50	\$.44	\$.41	\$.40
" Stranded.....					.60	.45	.45	.43
Per Foot Solid.....		.01	.01½	.02	.02½	.03	.04	
" Stranded.....		.01½	.01½	.02½	.03	.03½	.04½	
Number Feet Per Pound.....		70	80	40	30	20	13	

EXTRAS—For slow burning W. P. Wire—Per Pound Extra..... \$.01
 For Twisted Pair W. P. Wire—Per Pound Extra..... .02
 For Double Braid W. P. Wire—Per Pound Extra..... .01
 For Medium Hard Drawn—Per Pound Extra..... .00½
 For Armored Cables See Page PL-9.

ANNUNCIATOR—TELEPHONE WIRE, ETC.

Description		No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Fixture Wire	Solid							
	Light ¼"							
	Heavy ¼"							
	Stranded Light ¼"							
	Heavy ¼"							

Annunciator Wire		No. 18	No. 16	No. 14	No. 12
Single	Per Pound.....	\$.61	\$.58	\$.56	
	Per Foot.....	.00½	.00½	.01	
Twisted or Duplex	Per Pound.....	.64	.62		
	Per Foot.....	.01	.01½	.02	

Office & Damp Proof Wire

Single	Per Pound.....	.73	.68	.64	
	Per Foot.....	.01	.01½	.02	
Twisted or Duplex	Per Pound.....	.76	.71	.68	
	Per Foot.....	.02	.03	.04	

Asbestos Range Wire		No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Single Stranded Black Per Foot.....		.02½	.03		\$.04	\$.05		
Single Stranded Colored Per Foot.....		.03	.03½		.04½	.05½		
Single Glazed Cotton Per Foot.....		.04	.05		.06			
Single Artificial Silk Per Foot.....		.04	.05		.06			
Duplex Glazed Cotton Per Foot.....		.07	.08		.09			
Duplex Artificial Silk Per Foot.....		.08	.09		.10			
Twisted Pair Glazed Cotton Per Foot.....		.07	.08		.10			
Twisted Pair Artificial Silk Per Foot.....		.08	.09		.10			

Asbestos Range Wire or Switch Board		No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Wire Single Solid—Per Foot.....		\$.07	.08	.09	.10	.12	.14	

COVERED TELEPHONE WIRES

Size	Per Foot
No. 22—½" Twin Pair Plain Pothead Copper Wire.....	\$.03½
No. 22—¾" Twin Pair Flame Proof Copper Wire.....	.04
No. 22—B & S Twin Pair West. Elect. Flameproof Jumper Wire (Enam.).....	.06
No. 19—0.085 Twin Pair Flame Proof Copper Wire.....	.04
No. 19—½" Twin Pair Dry Braid Interior Copper Wire (Olive).....	.02
No. 19—¾" 3 Conductor Ditto.....	.03
No. 18—½" Twin Pair, Bridlewire, Saturated Braid.....	.03
No. 14—¾" Twin Pair Outside of Bridle Saturated Braid.....	.04

Note—For Prices of Sgl. Conductor use ½ of above prices per foot.

GALVANIZED TELEPHONE WIRE

Size BWG	No. 4	No. 6	No. 8	No. 10	No. 12	No. 14
EBB Extra Best Per Pound.....	\$.12	\$.12	\$.12	\$.12	\$.13	\$.14
B. B. Best Best " ".....	.11	.11	.11	.11	.12	.13
Steel " ".....	.10	.10	.10	.10	.11	.12
Weight Per 1000 Feet.....	153	112	74	49	32	19
Weight Per Mile.....	811	590	390	258	170	99

WIRE, MAGNET

Price Per Pound

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel-ed Cotton	Enamel-ed Single Cotton	Enamel-ed Double Cotton
8	\$.63	\$.66			\$.63	\$.67	\$.70
10	.65	.68			.64	.69	.72
12	.67	.72			.65	.72	.76
14	.70	.74			.66	.74	.80
16	.72	.76	\$.102	\$.126	.68	.76	.82
18	.78	.83	1.11	1.40	.72	.81	.90
20	.83	.96	1.24	1.60	.74	.90	1.00
22	.93	1.04	1.33	1.65	.76	.96	1.10
24	1.00	1.22	1.46	1.83	.80	1.05	1.30
26	1.10	1.37	1.60	2.04	.83	1.24	1.50
28	1.28	1.70	2.00	2.44	.90	1.40	1.80
30	1.60	1.86	2.15	3.30	.95	1.76	2.00
32	1.78	2.43	2.80	4.64	1.02	1.90	2.62
34	2.22	3.15	3.68	6.63	1.13	2.52	3.42
36	2.88	4.08	5.22	8.53	1.30	3.24	4.80
38	5.06	7.60	8.36	13.90	1.54	5.55	
40					1.86		

NOTE: For odd sizes use half the increase of next larger size.

For ¼ lb. lots use one third of above prices.

For one ounce lots use one tenth of above prices.

Price Per 100 Feet Plain Enamel-ed Single Cotton

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel-ed Single Cotton	Enamel-ed Single Cotton	Enamel-ed Double Cotton
8	\$3.60	\$4.00			\$3.35	\$4.00	\$4.20
10	2.40	2.40			2.00	2.40	2.45
12	1.50	1.60			1.36	1.60	1.60
14	1.80	1.25			1.28	1.55	1.57
16	.75	.80	\$0.90	\$1.00	.72	.75	.65
18	.36	.40	.56	.65	.40	.42	.52
20	.26	.32	.35	.36	.24	.32	.36
22	.20	.25	.25	.30	.16	.24	.30
24	.12	.14	.16	.20	.11	.14	.16
26	.09	.12	.12	.16	.09	.12	.15
28	.09	.10	.10	.12	.09	.10	.12
30	.09	.10	.10	.11	.09	.10	.11
32	.09	.10	.10	.11	.09	.10	.11
34	.09	.10	.10	.11	.09	.10	.11
36	.09	.10	.10	.11	.09	.10	.11
38	.09	.10	.10	.11	.09	.10	.11
40					.09	.10	.11

Note: Prices per 100 feet are higher than per pound rate to cover cost of measuring and should be used only for small lot sales.

LEAD & RUBBER COVERED WIRE AND CABLE

Single Conductor		Duplex Two Conductor		Three (3) Conductor	
Size	Price Per Foot	Size	Price Per Foot	Size	Price Per Foot
No. 14	\$.04	No. 14	\$.07	No. 14	\$.16
No. 12	.05	No. 12	.10	No. 12	.18
No. 10	.07	No. 10	.12	No. 10	.25
No. 8	.09	No. 8	.15	No. 8	.30
No. 6	.12	No. 6	.20	No. 6	.50
No. 4	.17	No. 4	.32	No. 4	.60
No. 3	.19	No. 3	.44	No. 3	.69
No. 2	.21	No. 2	.56	No. 2	1.00
No. 1	.27	No. 1	.64	No. 1	1.13
No. 1/0	.34	No. 1/0	.72	No. 1/0	1.25
No. 2/0	.38	No. 2/0	.88	No. 2/0	1.50
No. 3/0	.44	No. 3/0	1.20	No. 3/0	1.75
No. 4/0	.62				
250,000 C. M. Cable	.62				
300,000 C. M. " "	.70				
350,000 C. M. " "	.78				
400,000 C. M. " "	.86				
500,000 C. M. " "	1.00				
600,000 C. M. " "	1.32				
700,000 C. M. Cable	1.45				
750,000 C. M. " "	1.50				
800,000 C. M. " "	1.60				
900,000 C. M. " "	1.75				
1,000,000 C. M. " "	1.95				

NOTE: Above prices are based on following quantities:

No. 14 to No. 8 Less than 100 ft. No. 6 and larger less than 50 ft.

PARKWAY CABLES

Steel Taped		Non-Metallic	
Size	2 Cond.	3 Cond.	2 Cond.
No. 14 per ft.....	\$.35	\$.46	\$.18
No. 12 " ".....	.38	.59	.20
No. 10 " ".....	.46	.65	.22
No. 8 " ".....	.48	.74	.26
No. 6 " ".....	.70	.95	.37
No. 4 " ".....	.85	1.30	.60
No. 2 " ".....	1.06	1.65	.66
No. 1 " ".....	1.38	2.05	.80
No. 0 " ".....	1.50	2.10	.93

NOTE: Prices on Parkway Cables are based on Trade costs in quantities of less than 100 Feet. Larger quantities take lower prices. Consult your jobber.

BRONZE-Standards. Newels. Brackets-IRON

24 YEARS
of EXPERIENCE



Entrance
Standard
No. 7025



Bracket
No. 2067

HAVING specialized in the manufacture of lighting equipment for 24 years, Union Metal has been able to develop a complete line of standard brackets, newels, and entrance standards. Designs and styles for almost every type of service are available in either cast iron or bronze.

Where special designs are required, Union Metal offers the services of competent craftsmen and an efficient foundry. A thorough understanding of architectural requirements as well as a technical knowledge of lighting and the equipment to produce fine castings make Union Metal fixtures beautiful and distinctive.

THE UNION METAL MANUFACTURING CO.

General Offices and Factory: CANTON, OHIO

Sales Offices: New York, Chicago, Philadelphia, Cleveland, Boston,
Los Angeles, San Francisco, Seattle, Dallas, Atlanta.

UNION METAL
EXTERIOR
LIGHTING FIXTURES

(Continued from page 42)

ington, were among the outstanding matters which came before the convention resolutions committee.

C. E. Foster, Astoria, was elected president of the association. Other officers elected were: J. A. Casey, Walla Walla, vice president; F. E. Weber, Portland, incumbent, secretary-treasurer. Members of the executive board chosen were: F. H. Rogers, Medford, Ore.; E. G. S. Pryor, Seattle; W. C. Mainwaring, Vancouver, B. C.; J. H. Sroufe, Portland, and I. R. Elder, Portland. H. A. Patton, Seattle, was elected to the executive council of the international association.

More than 100 persons attended the banquet, at which International President William Boyd and International Secretary Victor Tousley spoke.

Entertainment features included a concert by the Firemen's band and numbers by the Lions' club quartet.

* * *

Washington League Learns of New Illuminants

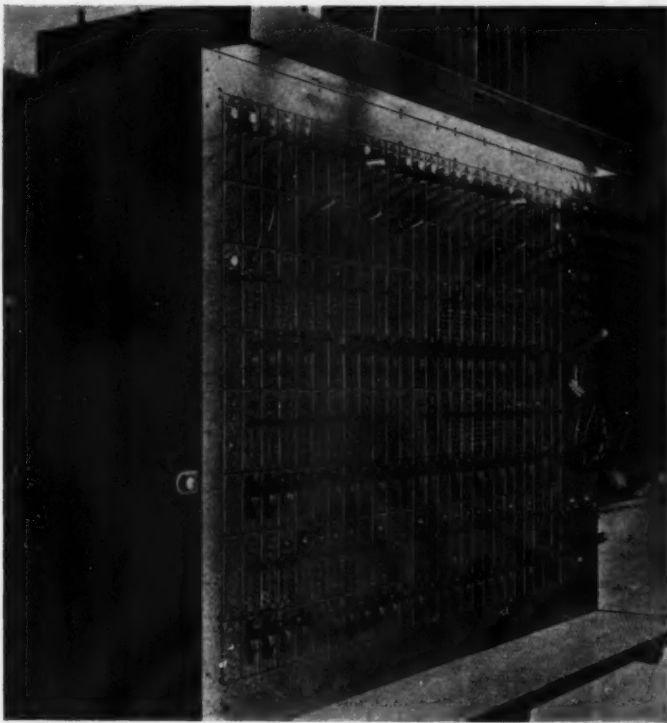
Sixty-five members of the Washington, D. C., Electric League attended a lecture given by Samuel G. Hibben, manager of the commercial engineering department of the Westinghouse Lamp Co., on newly developed illuminants and their uses next year.

According to Mr. Hibben, an average of 50 foot candles has been set as the bogey for the industry during the coming year. At present the average installation is 10 foot candles.



PARTNERS FOR EIGHTEEN YEARS:—H. J. Ryan and H. E. Jordan have been together in the Ryan Electric Co., Sioux City, Iowa, since 1912. Large buildings, schools and commercial work take up most of their time. Mr. Ryan is secretary-treasurer of the local Electragists' Chapter. Left to right: H. E. Jordan; Miss W. C. Curran; H. J. Ryan; I. Salberg, and W. Hansen.

The Largest Portable Stage Switchboard in the World



Built by

WURDACK

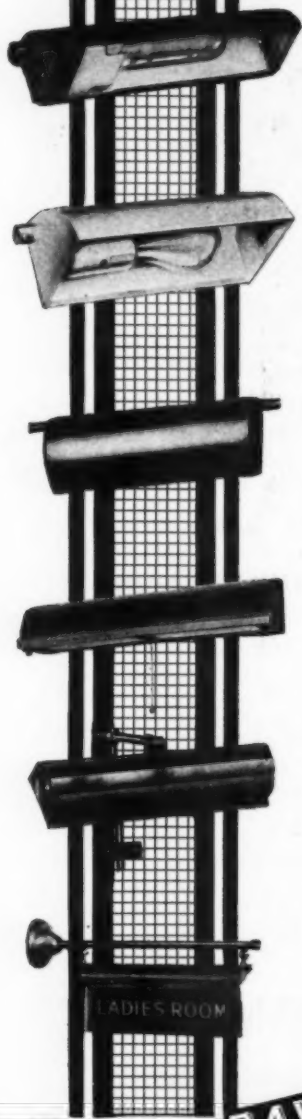
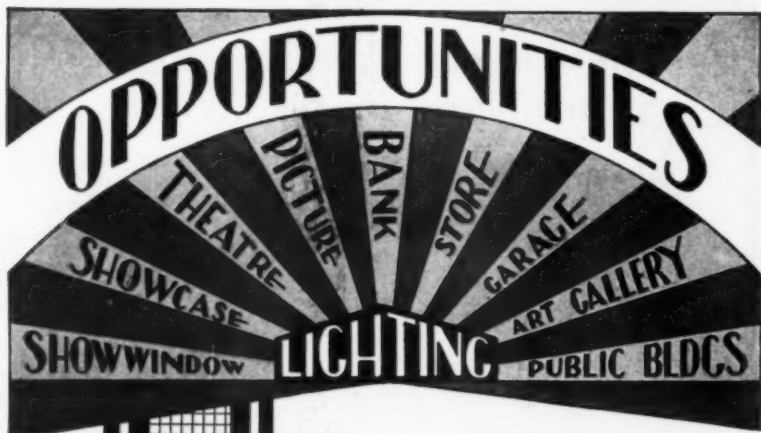
for the New Orleans Auditorium

The switchboard installation in the magnificent New Orleans Auditorium represents an outstanding example of Wurdack engineering and craftsmanship. The huge portable stage switchboard shown above brings to its disappearing stage a flexibility of lighting control and a command of effects second to none in the country. It is equipped with 80 control units and 100 dimmers, and has a current handling capacity of 700 kilowatts. Twenty flexible rubber covered cables, containing a total of 300 wires, connect it to the terminal cabinet. Despite its weight of over three tons, it can be readily moved to any position on the stage. May we send you our folder which fully describes this Wurdack installation?

WM WURDACK
ELECTRIC MFG. CO.

4444 CLAYTON AVE., ST. LOUIS, MO.

See Sweet's catalogue for nearest branch office.



Showcase Lighting

No. 90 single unlined unit for standard base T-10 tubular lamp, length 9 inches, height 1 7/8 inches, face opening 2 1/8 inches.

Wall Case Lighting

No. 96 for standard lamps to 60 watt, length 9 inches, height 3 1/8 inches, face opening 4 1/4 inches.

Refrigerator Lighting

No. 40 for surface wiring for T-10 standard base lamps. Also available in completely wired and assembled sets.

Bank Lighting

No. 1012 Cashier Cage Reflector for two standard lamps to 25 watt.

Picture Lighting

No. 624 Picture reflector for standard lamp to 60 watt, also made in tubular lamp size.

Interior Electric Signs

No. 2600 thin model electric sign. A variety of glass faces and mounting styles are available in these signs.

For complete data
send for Catalog
No. 8-A.

REFLECTOR **DAY-BRITE** COMPANY

3825 Laclede Ave. - Saint Louis



TWENTY-FOUR YEARS IN BUSINESS IN SAME NEIGHBORHOOD:

—C. W. Berger, head of the Berger Electric Co., Joliet, Ill., has been an electrical contractor since 1906. For the past three years he has been president of the Electrical Contractors and Dealers of Northern Illinois. His work is mostly engineering, power and schools.

Only 15 per cent saturation has been reached in the lighting field.

Mr. Hibben specified the human eye as the ultimate consumer of electric light, and stated that optometrists declared that 300 foot candles was the minimum under which the eye could distinguish things properly. He predicted an average of 300 foot candles in the next decade.

His talk was accompanied by lantern slides and actual equipment. Among the most interesting of the latter was the photo flash lamp which burns only for one-tenth of one second. His demonstration of the ultra-violet lamps and its many and varied uses was also a feature, and the demonstration of color lighting was another.

* * *

Earl Browne Back in Business

Earl E. Browne, formerly manager of the San Francisco Contractors and Dealers Association and executive secretary of the Northern Chapter, California Electragists, has again become associated with Charles A. Langlais, electrical contractor and dealer, 472 Tehama Street, San Francisco, with whom from 1919 to 1925 he was in partnership. Mr. Browne sold out his partnership to Mr. Langlais at that time to become manager of the San Francisco association. With the reorganization of the association to become the San



"BX"

is an aid to good work

YOUR MEN can run lines of G-E "BX" Armored Cable with a minimum of effort.

It's easier to work because stripping is so simple . . . requires no special tools. Kraft armor under the steel pulls out and snaps off readily by hand. The little red Anti-Short slips on in a jiffy, protecting the conductor from all raw edges.

General Electric reputation is behind G-E "BX."



Speed Up Wiring



1—Steel strip is here removed showing conductors protected by Kraft armor.



2—Kraft armor unwinds and snaps off underneath steel armor.



3—Anti-Short then slips on from the side. It's a split-sleeve of fiber.



4—Neat, protected end.

GENERAL ELECTRIC

(Licensee, Patent No. 1,687,013)

BX TYPE ARMORED BUSHED CABLE

Reg. U. S. Pat. Off.

MERCHANDISE DEPARTMENT

GENERAL ELECTRIC COMPANY

BRIDGEPORT, CONN.



PRODUCTS

Built to speed the work of Contractors **Cable and Conduit Hangers**



Minerallac ———

Best for all work . . . whether open wiring, cable or conduit is being installed. . . . When Minerallac Porcelain Bushings are used with Minerallac Hangers the job is perfect from a standpoint of performance and appearance. They are standard for 550 volts and up. Made of best spring steel—japanned or galvanized . . . much stronger than cast iron hangers for the same purpose.

Jiffy Clips

Minerallac

To meet the demand for a low priced but substantial clamp for hanging pipe, conduit or lead covered cable

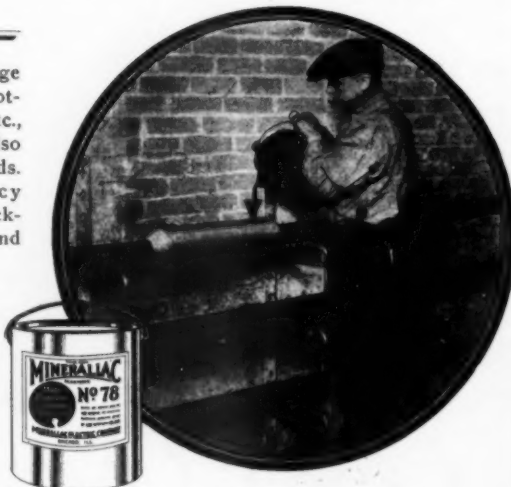


we offer the Jiffy Clip. It requires only one bolt or screw to hold it firmly in place. Light—strong—inexpensive—but dependable.

Insulating Compounds

Minerallac —

For use on high voltage lines in cable joints, pot-heads, terminal bells, etc., up to 33,000 volts. Also low voltage compounds. The right consistency which prevents "Cracking" in cold weather, and too free a flow when it is hot. . . . Never affected by extremes in temperature—a test worthy of any insulating compound. That is why Minerallac is standard with contractors.



MINERALLAC ELECTRIC CO.

25 No. Peoria St.

Chicago, Ill.

Francisco Electragists, and the abandonment of the position of manager, Mr. Browne, after a vacation, became reassociated with his former partner. The firm name will continue as Charles A. Langlais Company. Mr. Browne is the firm's representative in the San Francisco Electragists.

* * *

Southern Inspectors Hold Second Convention

The Southern Section of the International Association of Electrical Inspectors held its second annual convention at Jacksonville, Fla., recently. A good portion of the sessions was devoted to a discussion of recommended code changes.

A. R. Small, chairman of the code committee explained that a new issue of the code for 1931 may be omitted and that instead interim supplements will be made to take care of changes. He also gave a history of the code and its uses.

During the course of the discussion, I. W. Bowry of Richmond, Va., expressed opposition to all changes in the code except those made by the national code committee. Richmond, he said, had adopted the policy of automatically making every new issue of the code the official code of that city, and had profited by the policy.

Three technical papers were read at the session, dealing with trade and safety angles of the industry. Charles W. Abbott of the General Cable Corporation, New York, discussed "Where Non-Metallic Sheathed Cable Fits in Modern Wiring;" H. A. Calderwood, of the National Elec-



WIRED RINGLING BROS. THEATRE: George W. Cann, Logansport, Ind., is the gentleman who wired the Ringling Brothers Memorial Theatre at Baraboo, Wis. This theatre was built as a memorial to the famous Ringling Brothers of circus fame.



LIGHTS "ON"

LIGHTS
"OFF"

"I
turn
electric
lights
on and
off
regularly"

IN OCTOBER

These are the hours
when business takes
a look and picks up,
if store windows and
electric signs are light-
ed regularly.

The simplest and most
economical way to manage
this important lighting is to
use

TORK CLOCKS

Latest models in stock in 100 cities

Bulletin on request

TORK CLOCKS, INC., 12 EAST 41ST ST., NEW YORK
Factory and Service Department now consolidated at LINDEN, N. J.

**We've an ADAPTi Fitting
For any Conduit Job
You'll Ever Meet
Anywhere!**



TYPE C
No. 8020
ADAPTILETS
"All the bill"
wherever stand-
ard solid fittings
are required.



TYPE E
No. 8010-NT
And **THREADLESS**
ADAPTILETS help
to cut costs on lots
of jobs, too.



TYPE 53101
Here's the **ADAPTiBOX**
—fine for any place
where future outlet
changes are likely. Any
outlet direction, type or
size can be altered in a
jiffy with a screwdriver.



No. 9110
You can't beat
the **ADAPTi** Va-
por-Proof Line.
Neither can
steam, corrosive
spray, dirt or
weather.



SERVICE ELLS
A complete line
of Service En-
trance Fittings.
Weatherproof
without gaskets.
Easily wired.
Ells lie snug
against wall.

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carrying Types shown**

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2996 East 72nd St., CLEVELAND, OHIO

NEW YORK CITY—A. Stone, 112 East 23rd St. BOSTON, MASS.—E. R. Bryant, 52 "B" St.
CHICAGO, ILL.—United Electric Sales Co., 300 W. Adams St.
PHILADELPHIA, PA.—Craven Electric Sales Co., 30 Bank St.



COULDN'T STAY OUT OF THE GAME:—Chas. E. Emswiler, Columbus, Ohio, returned to the contracting business after an absence of several years. He does a general wiring business and is located at 930 Kelton street.

trical Products Corp., Pittsburgh, read a paper on "Armored Cable," while M. P. Ellis of Steel and Tubes, Inc., Brooklyn, read a "History of Electrical Metallic Tubing."

N. H. Pye of Atlanta was elected president of the southern section; C. S. Graham, Jacksonville, first vice-president; E. L. Kendrine, Fort Worth, Tex., second vice-president, and R. L. Gatewood, Atlanta, was re-elected secretary and treasurer.

Executive committeemen selected were George Welman, New Orleans, chairman; L. A. Bergeron, Baton Rouge, La.; W. M. Sullivan, Charlotte, N. C.; H. L. Wills; D. O. Nash of Atlanta, and the officers.

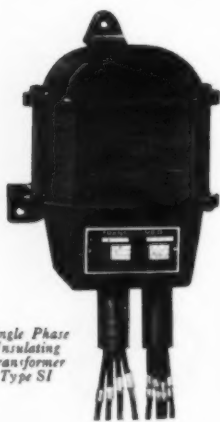
Dallas, Tex., was selected for the next meeting place by the new executive committee. Invitations had been received from Dallas and Fort Worth.

* * *

Milwaukee League Sponsors Ventilating Course

In continuation of the industrial program of the Electrical League of Milwaukee, Wis., designed to give the contractors a broader and better understanding of the characteristics and applications of motors, control, ventilating and heating equipment, the third series of lectures covering the subject of ventilation has been started. The field of ventilation is an important and far-reaching one and the course as outlined promises to be highly interesting and beneficial. Plans are under way for conducting an electrical modernization of industries activity for which these courses are fore-runners.

FOR LIGHTING JOBS— SURGES AIR-COOLED Transformers



Single Phase
Insulating
Transformer
Type SI

*Are Easy to Install
and Economical in
Operation!*

SURGES AIR-COOLED TRANSFORMERS meet the requirements of the National Board of Fire Underwriters for indoor installation and do not require fireproof vault. They may be mounted on a small amount of wall space.

Every contractor should learn more about the opportunity **SURGES AIR-COOLED TRANSFORMERS** offer for increased sales to industrial customers. Practically every industrial plant and large building is a prospect.

Write today for More Information

Consult our staff of Transformer experts on your transformer problems.

SURGES ELECTRIC COMPANY MILWAUKEE, WIS.

Special Air-Cooled Transformers to fill specific needs. Send us your requirements.



FOR EVERY RETAILER OF ELECTRICAL MERCHANDISE *A complete* SERVICE

NEAR you is a wholesale warehouse of the General Electric Supply Corporation. From this one dependable source of supply, you can secure practically everything that you need to conduct your business on a profitable basis.

By concentrating your purchases with the General Electric Supply Corporation, you automatically lower your percentage of operating expense. You save valuable time . . . through having only one purchase order form to write, only one bill of materials to check, only one account to post, only one check to draw in payment. Obviously, you also save money through this simplified office procedure . . . by operating with less clerical expense, by enabling all departments of your business to do more efficient work, by eliminating all duplicate lines and carrying a lower stock inventory.

To every retailer everywhere the General Electric Supply Corporation offers a complete, dependable, profitable service. With over 80 wholesale warehouses, strategically located throughout the United States, all communities are reached within a few hours—and the distance to many is measured in minutes. When you have an electrical need—*write*.



*... to serve better the electrical needs
of America.*

GENERAL ELECTRIC SUPPLY CORPORATION

GENERAL OFFICES • BRIDGEPORT, CONNECTICUT

Join us in the General Electric Program, broadcast every Saturday evening on a nation-wide N. B. C. network.

Fretz-Moon



Put Your Pencil Right There—

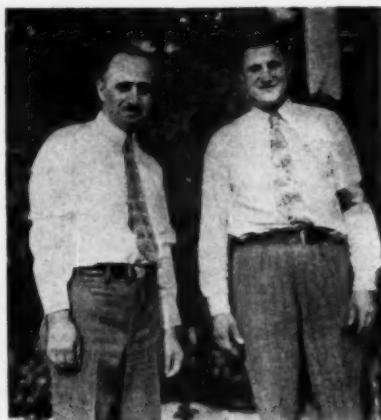
THE next time you are asked "How can you know that you are getting real value in conduit?"—just put your pencil on the little label that identifies every length of Fretz-Moon Conduit.

It means conduit with strong welds—perfect threads—time saving couplings—smooth glass-like raceway and a galvanized or enameled exterior that defies the ravages of time.

Specify Fretz-Moon Conduit for your next "particular" job.

**Fretz-Moon Tube Co., Inc.
Butler, Pa.**

RIGID CONDUIT



FRIENDLY COMPETITORS:—J. O. Lebow, left and J. F. Fox, electrical contractors in New York, N. Y. They are on the entertainment committee of the Manhattan Licensed Contractors' Association.

Restful Light Featured at Show

The Electric League of Minneapolis will sponsor an exhibit of "Restful Light" at the Radio Show, September 29 to October 4. This exhibit is planned so as to stimulate further interest in the refixturing of old homes.

* * *

Hall of Toronto Heads Western Inspectors

Arthur G. Hall, Toronto, Canada, was elected president of the Western Section of the International Association of Electrical Inspectors at its convention September 15, 16, and 17 in Chicago. Mr. Hall is chief electrical inspector for the Hydro-Electric Power Commission of Ontario, which position he has held for the past 15 years. He has been active on the executive committee and has served on a number of the code committees.

Other officers elected were: R. L. Daniel, first vice-president; L. L. Johnson, second vice-president, and William S. Boyd, secretary and treasurer. The executive committee comprises of E. J. Stewart, chairman; L. J. Dailey; P. J. Towry; George H. Parker; R. W. C. Moore, and E. F. Schmidt. New delegates to the executive council are: K. W. Adkins, C. W. Gustafson and F. O. Evertz.

Adequacy was one of the outstanding subjects of the convention. A. Penn Denton, engineer, Armored Cable and Metallic Flexible Conduit Section, NEMA, in his address



UNIFORMITY

CRESCENT PRODUCTS

- "Crescent" National Electric Code Rubber Covered Wire and Cable.
- Intermediate Grade Rubber Covered Wire and Cable.
- "Imperial" 30% Rubber Covered Wire and Cable.
- "Crescent" Lead Encased Wire and Cable.
- "Crescent" Armored Bushed Cable.
- "Crescent" Lead Covered Armored Cable.
- "Crescent" Flexible Metallic Conduit.
- "Crescent" Varnished Cambric Cable, Lead Encased or Braided.
- All kinds of special wires and cables.

CRESCENT WIRE

runs uniform to a degree that is not surpassed.

Physical tests have proven it to be of superior quality.

Experts familiar with fine precision wire have set upon it their seal of approval.

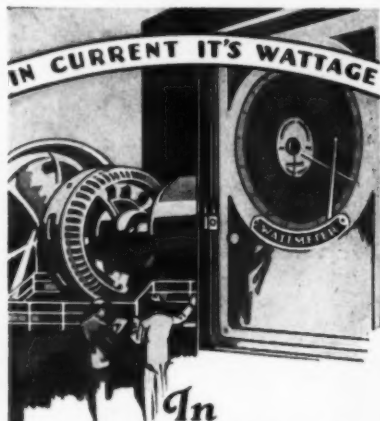
The use of CRESCENT WIRE in all of your installations will go a long way toward building your reputation. And developing your business by building a good name is a safe and sure way to success.

Therefore,—

Use CRESCENT WIRE ALWAYS!

CRESCENT
Insulated Wire and Cable Co.
 CRESCENT ARMORED WIRE CO.
 TRENTON N. J.

Forty-one Years of Knowing How in Every Crescent Product



In Mil Flex Blades it's Work Value!

JUST as wattage is the measure of electrical energy, **WORK VALUE** is the measure of hack saw blade performance. The **WORK VALUE** standard is based on the number of cuts per blade and the time per cut.

There is no guesswork about the quality of **MIL FLEX** Hack Saw Blades. The **WORK VALUE** basis on which they are now produced assures unequalled performance.

Write for
"A Statement of Facts"

Mil Flex for Electricians

Also a complete
line of Metal
Cutting Band
Saws

The
**Henry G.
Thompson
& Son Co.**
New Haven, Conn., U. S. A.

**WORK
VALUE**



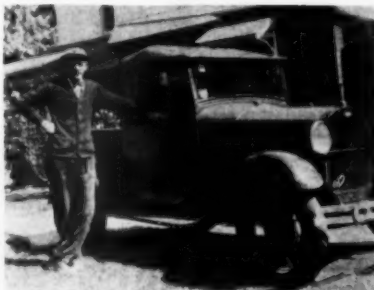
"Does the National Electrical Code Provide Adequate Wiring?" repeated the substance of his address at the Electragist convention, an abstract of which was published in the September issue of **ELECTRICAL CONTRACTING**.

In continuing further on this subject, he stated that within the past two years building conditions have completely changed, and the industry today finds itself facing the greatest reduction in the new building market for electrical products that has ever been known. "We must look to the rewiring of old buildings to largely offset this decline in new building business. All branches of the industry are affected alike, but we have potential markets in the rewiring of existing buildings, and in the electrical modernization of industry, which are of far greater value to the electrical industry than is offered to any other industry serving the building field. To take advantage of these markets, the industry must do a real conscientious job of selling adequate wiring.

"The lack of adequate wiring is affecting all types of wiring provided for in the National Electrical Code. Both minimum and maximum adequacy requirements affect conduit, metal raceways, and all the low-cost wiring systems. The minimum and maximum degrees of adequacy affect also exposed wiring, as well as the concealed wiring.

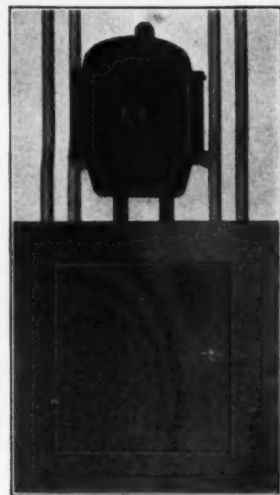
"It is now universally conceded that restrictive ordinances which require only rigid conduit wiring, very definitely restrict adequacy in all types of wiring.

"It is found that the net economic result brought about by restricting wiring in any locality to the most expensive type, is as follows: When,



DOES WIRING EXCLUSIVELY:
Ray Huff of Jackson, Mich., was formerly employed by the M & A Electric Co. Now they have specialized. Ray does wiring exclusively and the M & A Co. only sells fixtures.

Best for Industrial Lighting



SORGEL Air-Cooled Transformers are ideal for obtaining 110 volts for lighting from 220, 440, or 550-volt A.C. power circuits. Economical, efficient, reliable, safe. Profitable for both contractors and users.

Standard Sizes $\frac{1}{4}$ to 50 KVA.
Other sizes built to order

Single phase, 2-phase and 3-phase

They're Air-Cooled. Easy and economical to install in any convenient place inside of buildings, without enclosures or expensive fireproof vaults. No oil, no upkeep.

Approved by Underwriters

SORGEL
AIR-COOLED
TRANSFORMERS

WITH CONDUIT CONNECTIONS

Sorgel Electric Co.

Clybourn and W. Water Sts.
Milwaukee, Wis.

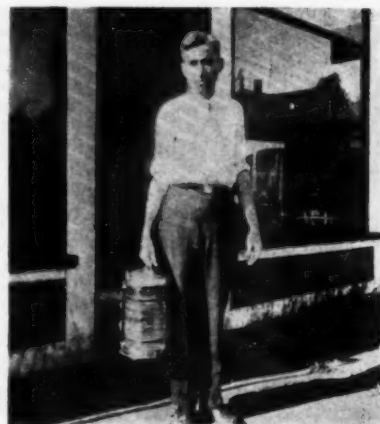
Doing One Thing Well

THIRTY years ago this company produced the first all-steel rigid conduit. Today our factory devotes its entire production to making conduit. When specifications call for "Galvaduct" or "Loricated" the conduit installation will be done well.



GALVADUCT LORICATED

GARLAND MFG. CO.
PITTSBURGH, PA.



DOES MARINE WORK:—T. H. Barley of the Liberty Electric Company, Bridgeport, Conn., holding a brass ship's lantern. He specializes in ship and marine electrical installations.

by ordinance, you require rigid conduit only, you restrict or destroy the business of 80 per cent of the total number of contractors who do the low-cost wiring, and force them into competition with the remaining 20 per cent, or so-called large contractors, and the result is a most unsatisfactory commercial situation. The smaller contractor, in order to protect his business and survive, enters the construction field of the larger contractor. He is, of course, handicapped by limited capital, ability, experience and in the end many of these men are forced to operate their businesses at a loss, or fail."

"In those cities where the reasonable use of several types of wiring is permitted, the large contractor and his men install conduit, the small contractor and his men install low-cost wiring, and everyone is happy. The net result of this situation is that all wiring installations, both large and small, are made at a profit. The residence wiring job installed in armored cable or knob and tube has twice the number of outlets as the residence which is required to be wired in rigid conduit. This type of job is in turn safer and there is much less chance, where sufficient outlets are provided, of the indiscriminate use of flexible cords after the original wiring is finished and after the contractor and inspector leave the job."

"Our industry has for years depended largely on codes, National and local, to legislate our wiring prosperity. We need to be better engineers, better salesmen and better business men. We need to advertise and tell the world about the comfort,

An Indispensable Instrument—Inexpensive—But A Forceful
Reminder of Your Generosity

YOU CAN HAVE EVERY

Test-O-Lite

**In Your Customers' Pockets
Carry YOUR Name**



Lists at
\$1.50
each
Write for Discounts

**A Practical Gift For
An Electrician**

—Welcome At Anytime

—Or As A Christmas
Remembrance

TEST-O-LITE is the first practical pocket-tester for testing high resistance leaks. Its tiny Neon lamp instantly detects trouble in electrical circuits, locates burnt-out fuses, light and motor troubles, faults in electrical appliances, auto spark-plugs and radio sets.

TEST-O-LITE has the remarkable characteristic of becoming illuminated at 110 volts through resistance of 20,000,000 ohms (20 megohms) and frequently as high as 50,000,000 ohms (50 megohms).

L. S. BRACH MFG. CORP.

Specialists In Electrical Protective Devices for 24 Years
Newark, N. J., U. S. A. • • • Toronto, Canada

AND NOW— THE SWITCH OF TODAY —AND OF THE FUTURE



No. 18422

THE NEW TRUMBULL COMBINATION RANGE AND METER SERVICE SWITCH



*Simplifies Range Installations
and Reduces Their Costs*

10 NEW and IMPROVED FEATURES



No. 18422-4W
Four circuit enclosed
branch cutout wired
and attached to the
combination range and
meter service switch.
... Also available with
a two circuit enclosed
branch cutout.

- 1 More wiring space.
- 2 Line connections go straight through.
- 3 Contacts all visible—which aids inspection.
- 4 Side hinge covers instead of drop-bottom hinge cover.
- 5 Blades of double break construction.
- 6 Mounted on a single slate base in one box. The two range circuit and two line fuses are under the same fuse cover.
- 7 Top end of boxes is equipped with shutters containing twistouts to take bottom connected standardized meters, 5 -15 amps., 25 -75 amps., single phase, and 5 -75 amps. polyphase.
- 8 The third wire for the line and range circuits is taken from the neutral terminal at base of switch.
- 9 The fuse cover is interlocked with switch so that fuses are only accessible when switch is off.
- 10 The branch circuit cutouts are attached by means of one screw through the $\frac{3}{4}$ " knockout opening in the bottom of the box.

THE TRUMBULL ELECTRIC MFG. COMPANY

Plainville, Conn.

BRANCH PANELBOARD AND SWITCHBOARD FACTORY AT
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Branch Factories—Switches, Switchboards and Panelboards:
A. G. Electric Mfg. Co. Division
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A GENERAL ELECTRIC ORGANIZATION



GLASS and PORCELAIN Insulators are SUPREME

Set Manufacturers are practically unanimous in insisting that dealers install **CODE STANDARD Aerial Equipment.**

Perfect Insulation in the heart of Reception.

Insist that your Jobber supply you with **KNOX CODE Insulators, Ground Clamps, Window Lead In Strips, etc.**

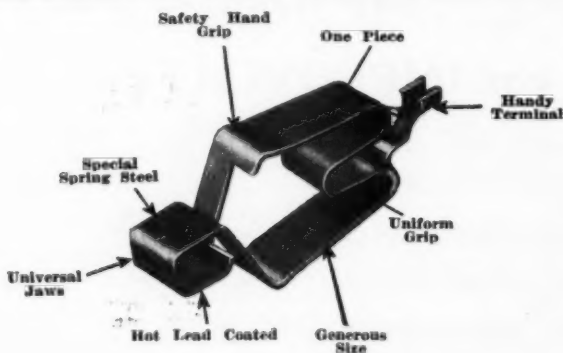
Illustrated Catalogue upon request.

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KNOX PORCELAIN CORPORATION
KNOXVILLE, TENN.

3 Sizes Meet all Needs

The **SHERMAN** line includes battery clips in three sizes, for series charging, constant potential charging and the charging of radio batteries. Made in one piece of special spring steel, then heavily coated with hot lead, the **SHERMAN** clip will last for years—current is carried by the whole piece. The **SHERMAN** clip is all spring—grips like a vise. There are no loose parts, joints or pockets for acid and fumes to corrode. Finally, the **SHERMAN** handy terminal makes connection to cable or wire easily, quickly and positively. **SHERMAN** clips are not costly because they endure—and no replacements are necessary.

Sold Thru Jobbers
H. B. SHERMAN MFG. CO.
Battle Creek, Mich.



Sherman Battery Clips



Standard Carton

convenience and value of adequate wiring. Then, and only then, will our business grow and all groups of the industry profit.

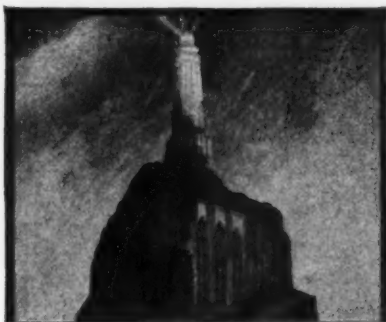
"We can legislate adequate wiring standards which are minimum safe regulations, but contractors and inspectors alike can never expect this degree of adequacy in wiring to produce bigger and better wiring installations.

"We must do a superior selling job, and in the sale of the adequate super-wiring installation the manufacturer, wholesaler and power and lighting company must all do their part and share, with contractor and inspector, this industry's responsibility to the public who need our electrical service."

John F. Gilchrist, vice-president, Commonwealth Edison Co., caused considerable discussion by his address on the material advantages of expanding electrical service rapidly. William S. Boyd, president, I.A.E.I., gave an inspiring talk on making every member desire to gain a higher conception of his work. Victor H. Tousley, electrical field engineer, N.F.P.A., made a strong appeal in his address to disregard local codes and special rules and adopt the National Code. He pointed out that so long as there are special rules, just so long is the National Electrical Code not standard. M. G. Lloyd of the Bureau of Standards, Washington, D. C., gave some pertinent data on low voltage accidents.



ADVERTISES ELECTRICALLY:—
A three-story electric sign hangs above the door of George Steinhardt, electrical contractor, Bridgeport, Conn. From left to right, are the three reasons for the success of this firm. George Steinhardt, owner; C. Friedman, store manager, and Henry L. Tonges, who supervises jobs on the outside.



P R O T E C T E D !

Electric Service

in

WORLD'S TALLEST
BUILDING

to be guarded by

G-E WIRING
MATERIALS

EIGHTY-FIVE office floors . . .
batteries of flood lights . . .
space for 20,000 tenants using
myriad lamps, business machines,
telephones—what tremendous, in-
tricate electric service the new tall-
est-in-the-world Empire State Build-
ing will require!

G-E Wiring providing this service
will be safeguarded from sub-base-
ment to tower beacon by more than
1,000,000 feet of G-E "White"
Rigid Conduit.

Architects, contractors, builders

EMPIRE STATE BUILDING

now under construction
in New York City

Architects—Shreve, Lamb
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Builders—Starrett Brothers
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Electrical Contractors—
L. K. Comstock & Co.

Electrical Engineers—
Meyer, Strong & Jones,
Inc.

all of New York, N. Y.

everywhere are selecting G-E
"White" because they know it can
be relied upon for the life of any
building.

It is high-grade mild steel tubing,
hot-dipped galvanized outside and in.

G-E Code Wires further add to the
dependability of wiring because
their long-life insulation *exceeds*
Code requirements. Clean finish
facilitates handling. Eight colors
make circuit marking easy.

G-E Merchandise distributors every-
where can supply you . . . or write
to Section **CW-210** Merchandise De-
partment, General Electric Co.,
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GENERAL ELECTRIC

WIRING MATERIALS

MERCHANDISE DEPARTMENT

GENERAL ELECTRIC COMPANY

BRIDGEPORT, CONNECTICUT




RUGGED RALCO RECEPTACLES



Type PRG Plug



Type B



Type H



Type O



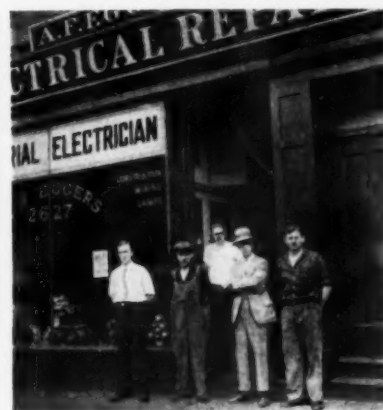
Type HF

You may pay more, but you cannot buy a more dependable Heavy Duty Circuit Breaking Receptacle and Plug than the RALCO Switch Blade Contact Type.

250 Volt D. C. 600 Volt A. C.

Write for Bulletin No. 101-A.

Ralco Manufacturing Company
Designers & Manufacturers
125 No. Albany Ave.
Chicago, Ill.



SPECIALIZE IN INDUSTRIAL WIRING:—Left to right: Maurice Walker, Ruddy Hoehl, Buster Kleibor, Albert F. Eggers and Otto Poeppel, all of the A. F. Eggers Co., Bronx, New York. This organization specializes in industrial wiring and has been most successful in this line of work.

Massachusetts Inspectors Hold First Meeting

The newly organized Eastern Massachusetts Chapter of the International Association of Electrical Inspectors held their first meeting in the rooms of the Metropolitan Electrical League, Boston, Mass., September 10. William P. Briggs of New Bedford, Mass., is chairman and William H. Greenlaw is secretary and treasurer.

* * *

Springfield Electricians Adopt 5 Day Week

Springfield, Mass., union electricians have agreed not to work on Saturdays. As the hourly rate has not been changed this means a reduction in income for the men, but they have volunteered to make this sacrifice as a means of creating 10 per cent more jobs for unemployed electricians of that city.

* * *

S.E.D. Elects Directors

The Society for Electrical Development elected directors of the 1 and 3 year classes, at the annual meeting of its members held in New York recently.

Those elected representing the electrical contractor-dealer group were: L. E. Mayer, president, Association of Electragists, 1 year; L. W. Davis, general manager, Association of Electragists, 1 year; S. C. Blumenthal, 1 year, and J. R. Strong, 3 years.



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Air Cooled Transformers

For
LIGHTING
SYSTEMS and other
INDUSTRIAL USES

REPLACE condemned balancing coils with transformers that conform to the New Code. They are safe, economical and efficient in operation.

Connect lighting load to 220, 440 or 550 volt power mains.
A field for business during the slack months.

Send for our
Bulletin 527

Representatives desired in principal cities and Industrial centers.

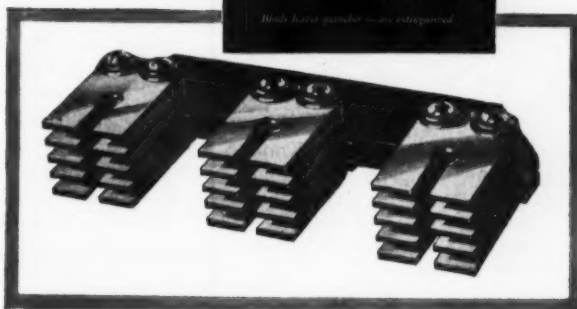
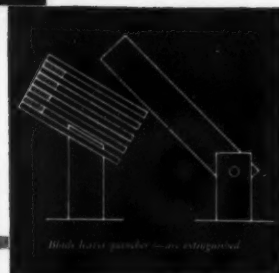
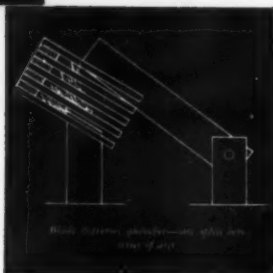
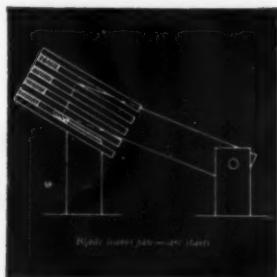
TRESTER SERVICE ELECTRIC CO.
69 Ogden Avenue at Market Street, Milwaukee, Wis.
"Trester Service Since 1908"

8 YEARS' SERVICE

*... without
a single failure*

IT is more than eight years since the first Westinghouse Arc Quencher was placed on 600-volt a-c. and d-c. Safety Switches—and not a single report of failure has been received. Also, it is worthy of note that this arc quencher enabled Westinghouse Safety Switches to meet fully the Underwriters' new test procedure for 460, 575 or 600-volt circuits without any change in design. The Arc Quencher is supplied on all 575-600-volt a-c. and d-c. WK-97, WK-66 and WK-55 switches.

A glance at the diagram shows how this device quenches the arc formed when a switch is opened. The switch blade on leaving the jaw passes through a series of slotted nickel steel plates. The arc is increasingly cooled and deionized by the successive plates, while the air gaps between the plates cause the arc to be broken up and blown out—no destructive gas pockets can form.



Multiple Type Arc Quencher used on 400 to 1200 ampere, 575-600 volt switches.

This arc quencher is simple and efficient. There are no moving parts to break or cause a short to ground or box. It is easily removed for inspection and is unaffected by copper deposits. It is resistant to extremely high temperatures and also is well insulated from the current-carrying parts of the switch.

The arc quencher is but one of the many desirable features of Westinghouse safety switches. Our nearest office can tell you of many more.

Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

Westinghouse

T 31316



TUNE IN THE WESTINGHOUSE SALUTE OVER THE N. B. C. NATION-WIDE NETWORK EVERY TUESDAY EVENING.



Here It Is!

This is the book that is giving the farmer new ideas on "Farming the Electrical Way." Do you want a copy?

The sponsors of the "Knob & Tube" campaign have published **The Farm Scrap Book** in order to better illustrate the many advantages of electricity on the farm. But to capitalize on these advantages, the farmer must improve his wiring, invest in wiring extensions, install new circuits, etc. **That's your job.** The sponsors of the "Knob & Tube" campaign will gladly co-operate with reputable Contractors to the extent of passing along live inquiries from farmers.

Just Mail The Coupon



**Illinois Electric
Porcelain Co.**
MACOMB, ILL.

**Knox Porcelain
Corporation**
KNOXVILLE, TENN.

**Porcelain Products,
Inc.**
FINDLAY, OHIO

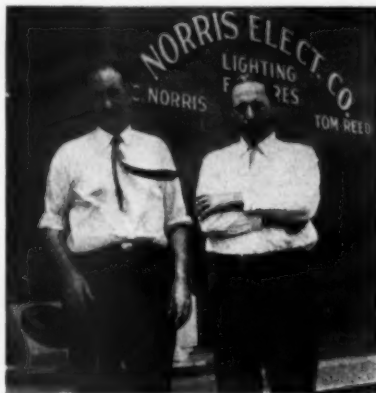
Knob & Tube Headquarters,
1104 Chandler Bldg.,
Washington, D. C.

Send me a copy of "The Farm Scrap Book" and send me any inquiries in this territory.

Name

Address

State



LIGHTING FIXTURE SPECIALISTS SELL IN OWN STORE:—
H. C. Norris and Thomas Reed are partners in the Norris Electric Co., Joliet, Ill., and while they do general wiring, are especially strong on lighting. They make it a point to get the prospects into the store for selection and can hardly remember wiring a residence without selling the fixtures.

Denver Approves Tubing for Exposed Work

The city electrician of Denver, Colo., has issued a memorandum that the use of approved metallic tubing and fittings will be permitted under certain rules and regulations. It can be used only for exposed work in dry locations where it is not subject to severe mechanical injury. Metallic tubing cannot be used for interior wiring systems of more than 300 volts between conductors, or of more than 150 volts to ground, nor for wires larger than No. 6 gauge. It can only be used when it is of the trade sizes as specified in the National Electric Code. Installation rules for conduit work govern its installation insofar as they may apply.

* * *

The Milwaukee League Makes Annual Report

The 1929-30 annual report of the Electrical League of Milwaukee, Wis., has recently been published setting forth its activities for the past two years. Incorporated in the report is the financial statement of the league, membership list and list of officers and directors; its activity on the Red Seal plan and covers the subjects of industrial and commercial lighting, industrial and refrigeration, and social activities. This booklet is also profusely illustrated containing pictures of Christmas outdoor lighting, the league display at the Home Show, and Light's Golden Jubilee.



An OAMCO REFLECTOR

for every job



No. 871

"OAMCO" Dome Type Reflector. For general illumination of mills, machine shops, garages, etc.



No. 887

Improved "OAMCO" weatherproof lighting fixtures for general outdoor illumination.



No. 847

"OAMCO" Deep Cone Reflector for Industrial uses.



No. 877C

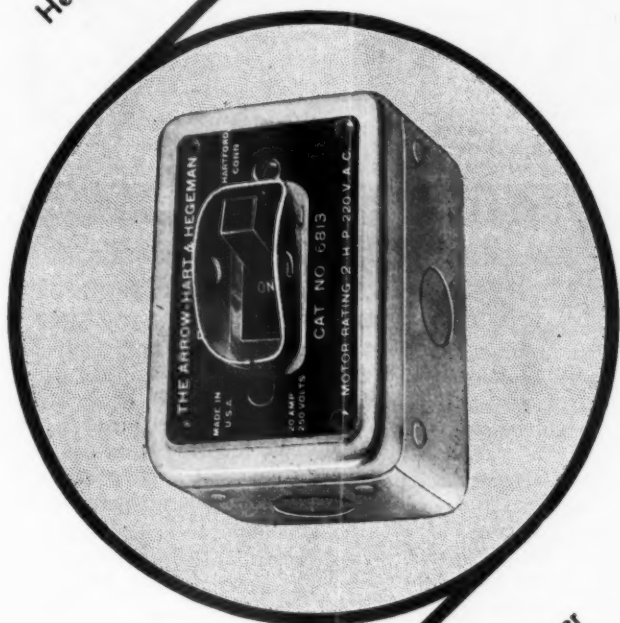
"OAMCO" Single Light Show Case Reflector.

Send for latest catalogue

**OVERBAGH & AYRES
MFG. CO.**

**413 So. Clinton St.
Chicago, Ill.**

Heavy initial overload capacity



Double or Triple Pole; $\frac{3}{4}$ to 2 Horsepower

New H&H LINE STARTING SWITCHES *for motors*

NEWLY AND ESPECIALLY DESIGNED

for Normal and High Torque Low Starting Current Line-Start Motors. . . Can be used to start all motors up to rated capacity. Metal parts and insulation built "over-size" to withstand initial overloads. The mechanism combines high initial-surge capacity with a high degree of mechanical capacity for hard usage. . . Special lever construction, easy to work, with positive "kick-off" release. Small in size, the switch can be mounted on any machine where handiest to operator. Enclosed in cadmium-plated box with conduit knockout holes; handle protected by metal guard with provision for locking. The LOWEST COSTING installation of any switch for motor starting. . . Approved by Underwriters for Horsepower Rating; catalog number on each housing.

Available in Double or Triple Pole; $\frac{3}{4}$ to 2 Horsepower, 220 to 600 Volts. Ask for specification data or tell us your requirements.

HART & HEGEMAN DIVISION
THE ARROW-HART & HEGEMAN ELECTRIC CO.
HARTFORD, CONN. MAKERS OF ELECTRIC SWITCHES SINCE 1890

Some "Sidelights" on the 1930 Mazda Lamp Sales Plan

By Laurence W. Davis, General Manager, Association of Electricists, International

"Effective September 1, 1930, all agents are authorized to sell at retail six or more lamps of any type at a discount of 10 per cent off list. The offering of this discount is not compulsory but is optional with the agent."

When the above announcement was made about the middle of August, 1930, there was a feeling on the part of many contractor-dealers that an injustice had been done because there seemed to be no provision in the plan which would compensate for this discount to the public. On my return from the Milwaukee convention, I was requested to investigate this new plan more fully, and contacted the Mazda lamp manufacturers from whom I received the following information:

Since the inception of the agency plan in 1912, there have been no important changes in the distribution of Mazda lamps, notwithstanding the fact that many changes have occurred in distribution and merchandising methods. An agent located in a small town of limited potential possibilities was compensated only on volume of sales and consequently suffered when compared with an agent in a larger town of unlimited sales possibilities. In the case of the first agent, insofar as function is concerned, he may be the better of the two. But since his sales were low, he received less compensation. The only fair, equitable and logical way to compensate for a service rendered is to pay strict attention to both function and volume, with accent on function. This has been done in the 1930 sales plan.

A retailer should and must have a sufficient gross return which will enable him to do business profitably and, in adjusting compensation for agents, this fact was kept uppermost in the mind. The primary object of any sales plan must be to increase sales profitably. This can be accomplished in one of two or three ways. Lower volume and higher prices, or greater volume and lower prices, or an incentive for the buyer to purchase in quantity with the resultant increase in units sold and a lower selling cost per unit.

This later plan has been adopted for the following reasons:

- (1) Makes an effective 18 cent price on 15 to 60 watt lamps, when purchased in lots of six.
- (2) Makes possible a 10 per cent price reduction on all types of lamps sold over the counter which will result in increased volume.
- (3) Will greatly stimulate the activity to get the householder to buy a reserve supply of lamps.
- (4) Gives the live, aggressive retailer an opportunity to increase his lamp sales and as the unit of sale increases, the cost of the sale per unit decreases.

There is a mistaken idea as to the extent to which the public may buy lamps in lots of six or more at a discount of 10 per cent. One dealer thought it would mean all his lamp sales, so a test was conducted in thirty-six retail stores to determine to what extent it might be expected to run.

The stores were selected according to channel of distribution, size of city or town, class of community served, and size of lamp appointment so as to give a true cross section of customer acceptance. No cards or other advertising material featuring the 10 per cent discount were used in the windows or inside the stores. The offer was made verbally by the clerks and an out-

side observer recorded exactly what occurred in each case. A summary of the individual transaction shows:

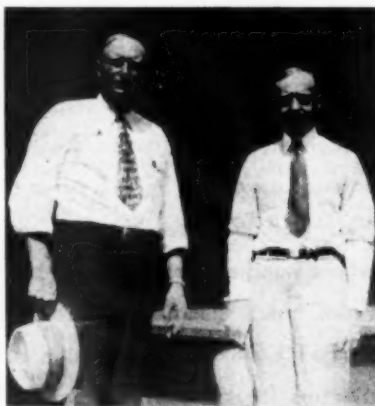
- (1) 1,000 customers bought lamps, 865 came in to buy lamps, 135 did not come in to buy lamps.
- (2) Of the 1,000 customers who bought lamps, 390 or 39 per cent bought in lots of six or more.
- (3) The total number of lamps sold was 5,000, of which 3,250 or 65 per cent were sold at a discount of 10 per cent.
- (4) The average number of lamps per customer who came in to buy one, two, or three lamps was increased from 1.68 to 2.84 or 70 per cent.

This test indicates that only approximately 35 to 40 per cent of the dealers' customers will buy lamps at 10 per cent discount, and he must be very aggressive to reach that percentage. It further indicates about the same results that are obtained in other merchandising lines that have for years followed a policy of giving the public the benefit of a saving when purchasing in quantity. It would seem therefore that this plan follows one that has proved its value in other lines of merchandise.

In any retail establishment, the gross return must be sufficient to cover all expenses of selling the article under discussion and bring a fair return to the merchant on his investment. This has been followed in the adjustment of agents' compensations so that the average per cent of gross compensation to net receipts is well above the average for the industry and seems fair and equitable to all concerned. Space will not allow publication of the percentage gross compensations to net receipts when the sales at 10 per cent have been considered, but they show up well, particularly when it is realized that an agent does not have to consider in cost of sales, the items of investment in stock, depreciation and obsolescence.

In summing up, the objectives of the new plan, according to the Mazda lamp manufacturers, are:

- (1) To strengthen the dealers' Mazda lamp sales position.
- (2) To increase dealers' volume and thereby reduce sales cost.
- (3) To inject a little flexibility into the agency plan so that agents may by reason of lower selling costs, local competitive conditions or specially adapted merchandising set-up offer the public a definite price inducement, if they elect to do so.



WIRED THE DES MOINES BASEBALL PARK:—On the left is Bob Honigger, with L. W. Andre, of the Capital City Electric Co., Des Moines, Iowa. Many people know that these two lighted the baseball park in their city, but few have been told it was a record-breaker for speed. This firm's largest specialty is sound installations, of which they have made over 200 in five states.

WAKEFIELD**Modernistic**

WHILE their competitors have been scrambling for cheaper material, offering lower prices, tendering profitless bids, the "Red Spot" lighting contractors have been making money with

Wakefield Modernistic

The reason is simple. Wakefield Modernistic is in line with today's trend—exclusive, distinctive, yet popularly priced. It is made on a mass production basis which enables the contractor to offer authentic "Red Spot" equipment that has remarkable "eye value" at only a little higher price than run-of-mine fixtures. The profits are correspondingly greater.

Wakefield Modernistic embodies all the Wakefield labor-saving and time-saving features—it comes to you like other "Red Spot" material—boxed complete, ready to hang—

ceiling units, chain or semi-rigid stem hangers, in sizes from 100 to 500 watts.

There are probably a dozen modernistic lighting jobs within easy reach of every lighting contractor—restaurants, tea rooms, sandwich shops, candy shops, specialty shops, and all those places patronized by women. They can't be sold standard lighting units because standard equipment is exactly what they don't want. They want something

MODERNISTIC

Write for Modernistic catalog sheet. A number of smart lighting men have sold Modernistic from the picture.

The F. W. Wakefield Brass Co., Vermilion, Ohio, U. S. A.



**WE
TELL 'EM
YOU
SELL 'EM**



OUR Direct Mail campaigns in which we have invested thousands of dollars are designed for the sole purpose of lining up sales prospects for you.

We do the missionary work; you step in and get the sales. This is only one instance of how we co-operate with distributors who meet us half way.

MEIER NU-AIR FANS are by far the finest all-aluminum ventilating and exhaust fans on the market. They sell themselves on appearance and stay sold on performance.

Every business needs a Meier Nu-Air the year 'round. Stale, stuffy air and unpleasant odors are more evident during Fall and Winter when doors and windows are closed than in summer.

2 cents well invested

Write today for Distributor Proposition

**MEIER ELECTRIC &
MACHINE CO.**

3525 E. Washington St.

INDIANAPOLIS, IND.

Inc. 1904



RADIO ADVERTISING BRINGS BUSINESS:—Harry Heyman, of the Standard Gas & Electric Company, Springfield, Mass. This firm has been working six months on electrical work for the expansion of a candy factory. The factory was running at normal until they began radio advertising. Now they cannot supply the demand with three shifts.

Tennessee Electragists to Meet

The Tennessee State Association of Electragists will meet in Chattanooga, Tenn., on October 13 and 14 at the Hotel Patton.

Among the speakers at this meeting will be L. E. Mayer, president, Association of Electragists, Chicago; L. W. Davis, general manager, Association of Electragists, New York; S. B. Williams, Chicago; W. R. Herstein, Memphis; P. E. Shacklett, B. H. Martin and Paul E. Curtis of Chattanooga.

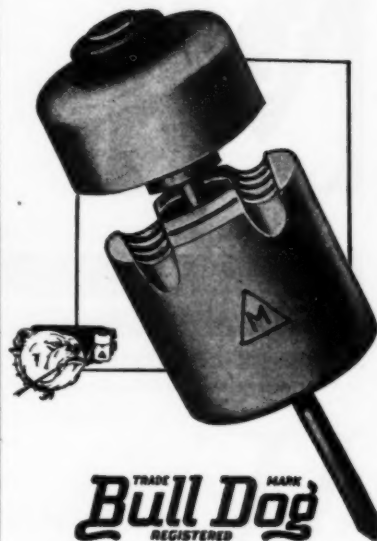
* * *

Board of Appeals Urged in New Orleans

Appointment of an Electrical Board of Appeals by the city to assist the city electrician in adjustment controversies with property owners, should any occur, in regard to the provisions of the new electrical code was requested in resolutions adopted recently by a committee representing civic organizations of New Orleans, La.

The meeting was held as a result of a request by the New Orleans chapter of Electragists. It was pointed out that the provision in regard to the use of asbestos insulation for the nitrogen-filled lamps made enforcement optional with the city electrician. The contractors felt

"It has a grip like it's namesake"



Split Knobs

THESE are the safe, approved knobs for all types of residence wiring. They mean better jobs at no added cost. Bull Dog Split Knobs, together with Illinois Porcelain Tubes, Cleats and Solid Knobs form a complete line of standard porcelain.



Sold Through Wholesalers

**Illinois Electric Porcelain Co.
Macomb, Illinois**



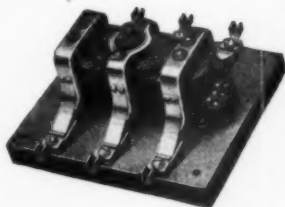
Lights Controlled by "Diamond H" Remote Control Switches

Remote Control of lighting circuits by the use of "Diamond H" Remote Control Switches, has become the modern way of turning on and extinguishing light. These switches are made to take care of any number of circuits and because of their dependability and excellence of material and workmanship, they are absolutely reliable.

Momentary Contact Switches at various convenient locations simplify the control.

Wiring costs are much less because it is not necessary to carry the main lines to switching points.

"Diamond H" Remote Control Switches are a part of the lighting control equipment on the Aircraft Carriers, Saratoga and Lexington, as well as many private yachts thruout this country.



Bulletin No. 10 completely describes these "Diamond H" Switches with wiring plans and applications. A copy will be sent on request.



**THE HART MANUFACTURING CO.
HARTFORD, CONN.**

BOSTON

DALLAS

NEW YORK

NEW ORLEANS

DETROIT

MINNEAPOLIS

CHICAGO

PHILADELPHIA

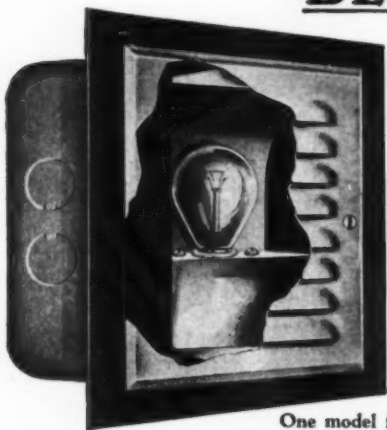
SAN FRANCISCO

CLEVELAND

TORONTO, CAN.

DIAMOND SWITCHES

BEL-SUN-LITE



Offers a New Compact Flexible Efficient Louvre Light

One model for all locations and positions! That's what you've been wanting and here it is! Nobody can make a mistake in mounting this louvre light . . . it's right side up whichever way the box is set; whichever way the lamp points! No planning beforehand, no checking up on receipt, no changing after installation. All that saves you money. The customer saves, too, because the Bel-Crome reflector makes this Bel-Sun-Lite give enough light from only a 10-watt lamp.

Theatre owners are being told about this louvre light this month. Get after them.

Our nearest resident engineer will show you one. Look for his name in the phone book of the nearest listed city.

BELSON MANUFACTURING CO.
804 SIBLEY ST., CHICAGO, ILL.

BELSON Resident Engineers

Atlanta, Ga.	New York, N. Y.
Baltimore, Md.	Omaha, Neb.
Buffalo, N. Y.	Philadelphia, Pa.
Cincinnati, O.	Pittsburgh, Pa.
Cleveland, O.	Richmond, Va.
Denver, Colo.	St. Louis, Mo.
Detroit, Mich.	San Antonio, Tex.
Ft. Worth, Tex.	San Francisco, Calif.
Houston, Tex.	Seattle, Wash.
Indianapolis, Ind.	Tampa, Fla.
Kansas City, Mo.	CANADA
Los Angeles, Calif.	Montreal, Que.
Miami, Fla.	Toronto, Ont.
Minneapolis, Minn.	Vancouver, B. C.
New Orleans, La.	Winnipeg, Man.

that some sort of board of appeals should be established in case property owners felt that an action of the city electrician worked a hardship upon them.

Although willing to support the city electrician in enforcing the correction of hazardous electrical defects, the committee is not willing to lend its approval "to the summary enforcement of rules for the correction of minor technical defects which do not endanger life and property," it is pointed out in the resolutions. It is suggested that the board comprise three members, one the manager of the Louisiana Rating and Fire Prevention Bureau, and the other two electrical engineers not affiliated with contracting interests.

* * *

Boston League Enters Tercentenary Parade

One of the largest floats in the Tercentenary parade in Boston, Mass., September 15 and 17, was sponsored by the Metropolitan Electric League of that city. The foreground on each side of the float depicted the battle of Lexington. A huge flag, 12 ft. high and 30 ft. long, formed the background.

The league float was one of a series of floats sponsored by various industries portraying significant events in this country's history.

The parade will be repeated in October in connection with the American Legion celebration.

In St. Louis

Hotel Mayfair....

8th and St. Charles

In the center of theatre and shopping districts. Floor lamps, fans, circulating ice water in every room. The quiet, refined atmosphere of an exclusive club—an hotel of distinction. Dining room. Coffee shop. Garage service.

400 ROOMS — \$3⁰⁰ to \$6⁰⁰
BATHS

Hotel Lennox....

9th and Washington

St. Louis' newest and smartest hotel opened September 3rd. In the heart of business district. Dining room. Coffee shop. Garage service.

400 Rooms with tub — \$3⁰⁰ to \$6⁰⁰
bath and shower

Hotel Kings-Way...

West Pine at Kingshighway

Opposite beautiful Forest Park. Near bus, street car and motor highways. 20 minutes from downtown. Club breakfasts, table d'hôte dinners. Rooms for two from \$4. Special rates for permanent guests.

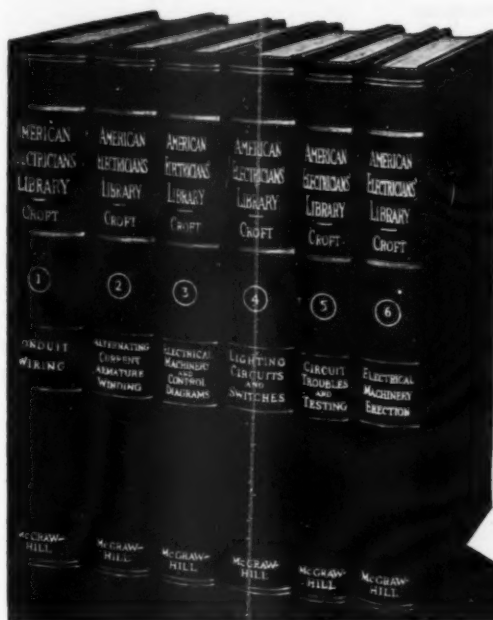


Heiss Hotel System KMOX



NEW PRESIDENT OF NEW YORK CONTRACTORS:—Louis Freund, who has been active in association work for many years in and around New York City, was recently elected president of the New York State Association of Electrical Contractors and Dealers at its annual convention.

To electrical workers who want to succeed ... an invitation to examine this big Library—



What the six big volumes of this Library offer you!

Terrell Croft prepared this subscription library for practical electricians. The six volumes bring to you exact step-by-step directions for the installation of every type of conduit wiring job—they tell you how to handle every kind of lighting circuit and switch problem—they give you short cuts to saving time on maintenance routine—they give you useful tips on electrical machinery erection—they offer you practical, clear explanations of all kinds of A.C. armature winding jobs—they bring you a thousand armature winding, electrical machinery, and control diagrams—they show you the surest, quickest methods of locating and remedying circuit troubles. They cover the countless problems you are confronted with daily.

More than 1,000 wiring diagrams—

The thousand wiring diagrams in these six books are alone worth the price of the entire library to any practical electrician. Many of these diagrams are unobtainable elsewhere; many more are very hard to get from any other source; all of them are much clearer and more helpful than most wiring plans available. They include:

- 300 lighting circuit diagrams, and a number of other practical working drawings
- 300 conduit-wiring diagrams
- 9 single-phase armature winding diagrams
- 52 two-phase armature winding diagrams
- 100 three-phase armature winding diagrams
- 570 electrical machinery and control wiring diagrams

This Library contains all the useful hows and whys and wherefores for wiremen, trouble shooters, armature winders, electrical maintenance men, and electrical contractors. It gives you the practical information that has earned for these books the friendship of countless successful electrical workers. With these six books you'll step ahead faster and you'll go further than the man who relies on his own limited experience.

THOUSANDS of men in every part of the country have used the six big books of the American Electricians' Library to make their work easier and to push themselves ahead. If you, too, are determined to go further in electrical work, no matter what your position is now, you are invited to examine the American Electricians' Library for 10 days without any obligation to purchase it. Furthermore, if after you have examined these books you decide that they can help you as they have helped countless others, you can have Braymer and Roe's *Rewinding Small Motors* absolutely free.

Terrell Croft's American Electricians' Library

6 Volumes—over 2,000 pages—fully illustrated
\$1.50 in ten days and \$2.00 monthly for 8 months.

Send no money—see these books for 10 days

Let us send you these fact-packed books for ten days' free examination. There is no charge for the examination—no obligation to buy the books unless you want them. These books have helped, and are helping, so many men that it is no longer a question of "Will they help you?"—the question is "Will you let them help you?"

We could fill several pages with arguments telling how so many thousands of men have profited by the American Electricians' Library. But we'd like to leave it to the books—and we'll stand or fall on the outcome of your examination. You will agree that this is a liberal offer; and, frankly, we couldn't afford it if this examination offer didn't usually convince. We know how good these books are—we want you to see them for yourself.

FREE!

if you act now

Braymer and Roe's **REWINDING SMALL MOTORS** comes to you absolutely free if you act now in getting your **AMERICAN ELECTRICIANS' LIBRARY**. This book will give you much practical information about rewinding all types and designs of fractional horse-power motors.

A Valuable Book Absolutely Free

After you have seen these books at your leisure—after you have used them in your work—decide whether or not they are going to help you. Then, return the books or remit only \$1.50 and then \$2.00 a month until \$17.50 has been paid. On receipt of your first payment Braymer and Roe's *Rewinding Small Motors* will be sent you absolutely free.

Fill in and mail this coupon now

McGraw-Hill FREE EXAMINATION COUPON

McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York.

Gentlemen: Send me for 10 days' free examination, all charges prepaid, the **AMERICAN ELECTRICIANS' LIBRARY**, 6 volumes. If I find the books satisfactory, I will send you \$1.50 in ten days, and \$2.00 a month until the Special Price of \$17.50 has been paid. If they are not what I want I will return them. Upon receipt of my first payment you agree to send me free a copy of Braymer & Roe's *Rewinding Small Motors*.

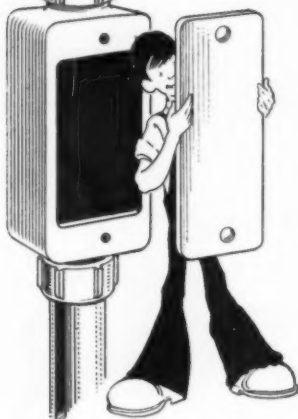
Signature
Residence Address
City and State.....
Firm or Employer.....
Occupation.....E.C. 10-30



TUBULETS

Behind that cover

Is a most compact little outlet



Approved Pat. Pending

Originated and designed by The Thomas & Betts Co. especially for use with Electric Metallic Tubing (thin wall conduit).

Tubelets are the fastest working conduit fitting ever devised—just a wrench is all you need—insert the tubing—tighten the nut, and the job is done. No loose parts and no split parts.

Tubelets are manufactured in two styles, rectangular and round—and in all types.

Tubelet Wiring Devices are made of black porcelain and form a rich color contrast with the bright silvery finish of Tabolite.

Have you had the T&B bulletin telling about Tubelets?



THE THOMAS & BETTS CO.

Main Office: 15 Park Place

Factory: Elizabeth, N. J.

Beating Competition with Brains

Competition is tough in the electrical contracting business these days; and every day it gets worse. Successful contractors have found they can beat fly-by-night competition best by using their brains, and by educating their responsible employees. You can help your head men to keep abreast of the times and save you money by sending each his own copy of ELECTRICAL CONTRACTING.



WIRED FIRST MOVIE IN SPRINGFIELD:—Clyde Kavanaugh (right), has built up a large list of satisfied customers on power and commercial work, but one specialty he is fond of is theater wiring. He installed the first motion picture equipment in his city and remembers that he not only had to hook up the machines but show the operators how to run them. With him in this picture is L. A. Hall, city electrician of Springfield.

Jersey Coast Electrical League Organized

The Jersey Coast Electrical League was recently organized in Monmouth County, N. J. The purpose of the organization is to better the conditions of the electrical industry in general in that section of the state.

Arthur Nelson of Long Branch, N. J., was elected president and Mr. Proctor of Asbury Park, N. J., vice president. Harold S. Allen, Red Bank, N. J., electrical contractor, was elected secretary-treasurer.

* * *

Carl M. Frykman

Carl M. Frykman, one of the pioneer Minneapolis, Minn., electrical contractors, died August 9, 1930, aged 50. Mr. Frykman entered the electrical business in 1910 and in 1915 associated with his brother, Victor, to form the Frykman Brothers Electrical Company. His brother, Oscar M. Frykman, is Chief Electrical Inspector.

* * *

Minneapolis League Starts Wireman's School

A course in inside electric wiring, blue-print reading and estimating and installing electric machinery will be conducted by Martin Streed, a

HOW ONE CONTRACTOR BUILDS CONFIDENCE



"We have always felt that most customers are willing to pay a fair price if they know they are not being charged more than someone else. The great trouble has always been that we never had any proof that we charged everyone alike. Now we have your Service."



Pays Its Cost

"We recently had a case of a good customer of ours who complained that our prices were very high. We took your Price Book and laid the facts before him and he was perfectly satisfied. Your Service has been a great help to us and has already paid for itself many times over."

Keeps You on a Safe Course

You don't want to overcharge a good customer, yet you are entitled to a fair price that will enable you to pay your overhead and leave you a profit as well. If you are interested in learning more about the NATIONAL ELECTRICAL RESALE PRICE SERVICE that hundreds of Contractors are using to build confidence and profits, simply attach the coupon below to your letterhead and we will send full information, without obligation, of course.

Henderson-Hazel Corporation,
5005 Euclid Ave.,
Cleveland, O.

Without obligation send us full information about the "NATIONAL ELECTRICAL RESALE PRICE SERVICE".

Name.....

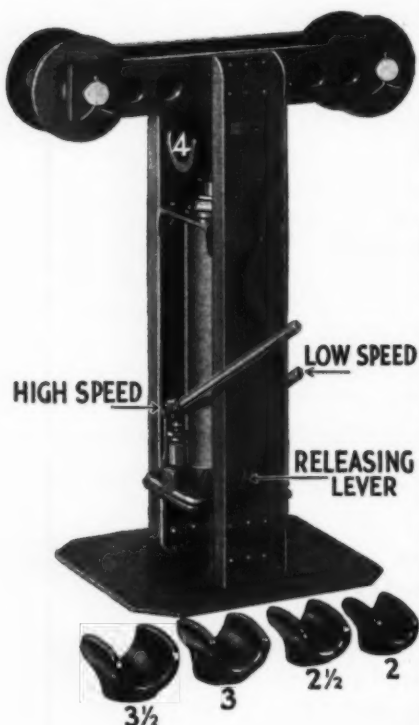
Street Address.....

City or Town.....

State.....

EC10-30

No. 4 Chicago Thirty Ton Hydraulic Bender



The Chicago Bender is rapidly replacing the old style Benders. Some contractors are operating four to six Chicago Benders, proving its satisfaction and economy. Will bend 1 1/4" to 4 1/2" pipe or conduit with ease and safety. Write for bulletin.

Manufactured by
**GUSTAVE LIDSEEN
INC.**
832-840 So. Central Ave.
CHICAGO, ILL.

member of the Electric League of Minneapolis at Dunwoody Institute this fall and winter.

The purpose of these classes is not to make more wiremen, but to make better mechanics out of journeymen, who are now employed.

* * *

8000 Storekeepers to be Told About Lighting

A big field in the modernization of stores will again be developed by the Electrical League of the Niagara Frontier this Fall. One of the finest campaigns launched in that territory will be started by October 1 to get merchants to light up for better business.

The big feature in this drive is a 20-page booklet showing actual photographs of modernized store lighting jobs in this territory. Each booklet contains list of members in good standing with addresses and telephone numbers.

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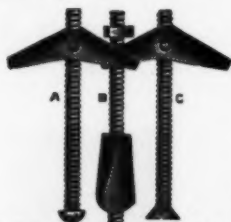
Requests Wholesalers to Use Resale Prices

The Lackawanna-Wyoming Valley Chapter of Electragists, Wilkes-Barre, Pa., has adopted a resolution that wholesalers be requested in their over-the-counter or similar sales to retail customers or in quotations to same, to use the prices set forth each month in the special price section of *Electrical Contracting*. This resolution has been sent to all wholesalers among the membership.



**NEVER STOPS SELLING UNTIL
JOB IS ADEQUATELY WIRED:**—R. J. Dreese, Akron, Ohio, sells extra outlets and switches, yard lighting, master switches, etc., to the limit, and wins out by drawing the customer a mental picture of how all the units will operate after the job is done and forgotten. He has been doing this for a long time and has never had a complaint.

the Spring's the thing!



Paine Spring Toggles work in any position in attaching your electrical fixtures to any hollow wall, ceiling or floor. Electrical contractors everywhere are using Paine Toggles because the exclusively patented spring feature makes installation so easy and speeds up the work—saving time and money. Order today from your jobber or write us direct giving us his name.

The Paine Company

2849 Carroll Ave., Chicago, Ill.
79 Barclay Street, New York City

P A I N E S P R I N G T O G G L E S

TIME IS MONEY—

The Jiffy Line

WILL SAVE YOU TIME...



Box Cutter

... cutting holes, bending pipe, etc. These finer tools will help you make more money and enable you to do a better job, not only quicker, but easier and more economically.

**The Job
in
a Jiffy**



Pipe Bender

**—with
a
Jiffy**

"Satisfaction guaranteed or your money back," has been and will continue to be the policy of this company. Let us send you literature describing our quality line of tools. Write us at once.



Drillpress
Cutter

ESTABLISHED 1915

PAUL W. KOCH & COMPANY

20 N. Wacker Drive, Chicago

How to Modernize Plant Lighting with Benjamin Porcelain Enameled Steel Reflectors

Modern Production Schedules Demand More Light

The insistent urge upon industry to lower production cost, avoid errors and spoilage, and improve the conditions under which employes see and work, all tend to the use of more light and better lighting systems.

To keep pace with the improvement in shop management which better lighting has brought to many industrial establishments, any plant whose lighting system is more than five years old is now in need of betterment.

Sell the Idea of Measured Illumination

Go after these relighting jobs. Show the factory and shop managers that the effects of their lighting system may be definitely measured. Show them how the foot-candle meter measures the amount of light that actually reaches the working surfaces and aids their workers to see accurately and quickly.



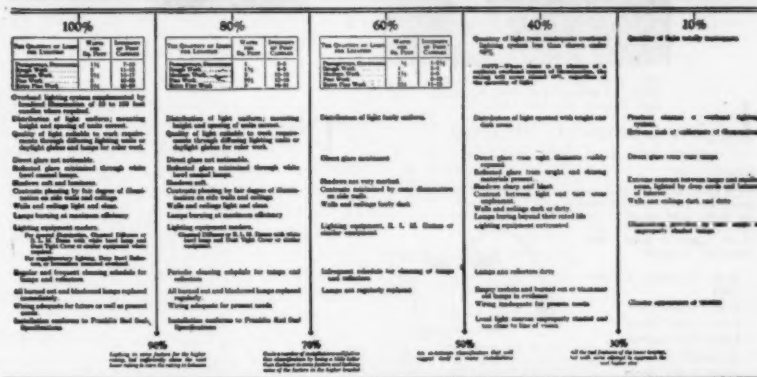
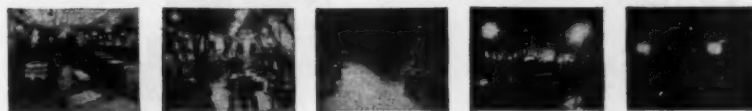
**The Foot-Candle Meter, the Modern Instrument
for Measuring the Amount of Light on the Work**

Point out the other factors that influence the efficiency of the lighting system. To measure these factors, the Benjamin Rating Scale for an Industrial Lighting System has been devised. You can show the plant manager how, using only his own powers of observation, guided by a few simple statements as to what to look for and what it signifies, he can determine for himself in a few minutes just where the lighting of any department stands as compared with accepted standards of factory lighting.

This scale will indicate if the plant lighting equipment—reflectors, fittings and lamps—meet the modern requirements of the plant, and will point the way to betterments through the installation of modern high intensity porcelain enameled steel reflectors.

Benjamin Porcelain Enamelled Steel Reflectors Meet Modern Lighting Needs

Benjamin Porcelain Enameled Steel Reflectors give a well diffused and pleasing illumination, because good diffusion is a natural characteristic of



Reduced Fac-simile of the Benjamin Rating Scale for an Industrial Lighting System

the Benjamin porcelain enamel reflecting surface.

Moreover the glass-like reflecting surface does not tarnish nor discolor. It is easily kept clean with soap and water. And no matter how many times it is cleaned the reflecting surface is not affected.

The Result of Years of Research

"Certified by Benjamin" Porcelain Enameled Steel Reflectors are the result of years of research and tests in the laboratory of the Benjamin Electric Manufacturing Company. And every step of their manufacture is carefully controlled and supervised.



Benjamin Porcelain Enameled Steel Reflectors are Especially Suitable for Industrial Lighting

to assure a product of uniform high quality.



"Type 79" Glassteel Diffuser

Benjamin "Type 79" construction permits the reflector and lamp to be removed as a single unit so the original high efficiency of the lighting system can be maintained at the lowest possible cost for cleaning.

**Send for the
Rating Scale**

Now, with the longer periods of darkness coming, is the time to go after these relighting jobs. We will supply you with copies of the Rating Scale and a new handbook on selling productive lighting for industry, without cost or obligation.

Benjamin Electric Mfg. Co.

General Offices and Factory:
DES PLAINES, ILLINOIS
(Chicago Suburb)
Divisional Offices:

NEW YORK CHICAGO
247 W. 17th St. 111 N. Canal St.
SAN FRANCISCO, 448 Bryant Street



The ideal equipment for threading conduit—ARMSTRONG BROS. Chain Vise and Triplox (3-size) stock.

Light, Compact, Strong
... goes into tool bag, attaches anywhere

ARMSTRONG BROS. (patented) Chain Vise combines exceptional strength and large capacity with light weight. Goes into tool bag conveniently, attaches to any bench, wall or post. Six improved features:

- 1 Drop forged, 1-piece Jaws
- 2 Drop forged Base
- 3 Drop forged Handle
- 4 Alloy Steel Screw
- 5 Hardened Steel Nut
- 6 Proof-tested Chain



One-piece forged jaw gives full support to smallest conduit.

Armstrong Bros. Tool Co.

"The Tool Holder People"
341 N. Francisco Ave.
Chicago, U. S. A.

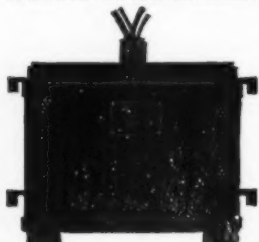
ARMSTRONG BROS.

SPECIALISTS!

Standardize with

Standard

The Complete Line of
Transformers for Inside and
Outside Installations



Type M.D. Air cooled indoor transformer conforms to the underwriters code. This is one of many "STANDARD" Quality Transformers.

Mail This Coupon Today

The STANDARD TRANSFORMER CO.
WARREN, OHIO

Gentlemen: Kindly send me bulletins describing and illustrating your complete line of "Standard" Transformers.

NAME.....
ADDRESS.....
CITY.....STATE.....



Coit A. (Duke) Smith

A ROLL O' TAPE

Electrical flash-
es gathered
among the Big
Wire-and-Pipe
Men by

THERE are 86 Electragists in Detroit now, and the spirit among them has improved by leaps and bounds. Although they meet in various groups there is fine understanding and co-operation throughout the entire chapter. A number of the members, in testifying to this condition, give much credit to C. C. Cadwallader, their manager. "Why," said one, "He's gotten us so well acquainted that we now think nothing of giving each other intimate and valuable information over the telephone."

ED JAY, of the Metropolitan Electric League, Boston, is a collector of business cards. These are mounted on large card board sheets and displayed in the office. The collection contains names of callers from points as far distant as Argentine, and includes people interested in all phases of the electrical business.

THE Warren Biglow Electric Co., Worcester, Mass., recently wired a fine residence for one automobile tail light in each room in addition to the regular lighting system. These small 6-volt lights were concealed behind pictures, etc. They furnished enough light to see plainly and frighten burglars without waking children and nervous old ladies in the house. Lights were controlled only from the front hall and the master's bedroom.

WHEN the George J. Steinhardt Company of Bridgeport, Conn., figures a new residential wiring job they always urge wiring for an electric range. This not only brings a little extra work for the job but makes the customer a much better prospect for an electric range at some later time.

REVERSING the old adage, the McCleary-Harmon Electric Co., Detroit, believes in being "pound wise and penny foolish," especially in spending a lot of money for long distance phone calls. Not only do they phone customers who are sometimes hundreds



Folded will pass
through 16" opening

Bending
capacity
3/4" pipe

Height 36"
Weight 32 lbs.

PRACTICAL

The "Handy Andy" Vise Stand is a most practical, portable Vise Stand, easily carried from place to place, has no loose parts, can be instantly set up and is rigid and unusually strong. Will accommodate hinged or chain vises without drilling. Big time saver on the job. Fully guaranteed. Accept no substitutes. Order from your Jobber.

"HANDY-ANDY"
VISE STAND

WESTERN WIRE PRODUCTS CO.
3rd and Spruce Sts.
ST. LOUIS, MO. U. S. A.

**HOLTZER-CABOT
ELECTRIC COMPANY**

Manufacturers of

Electrical Signaling Systems

for

Hospitals

Schools

Public Buildings

Industrial Plants

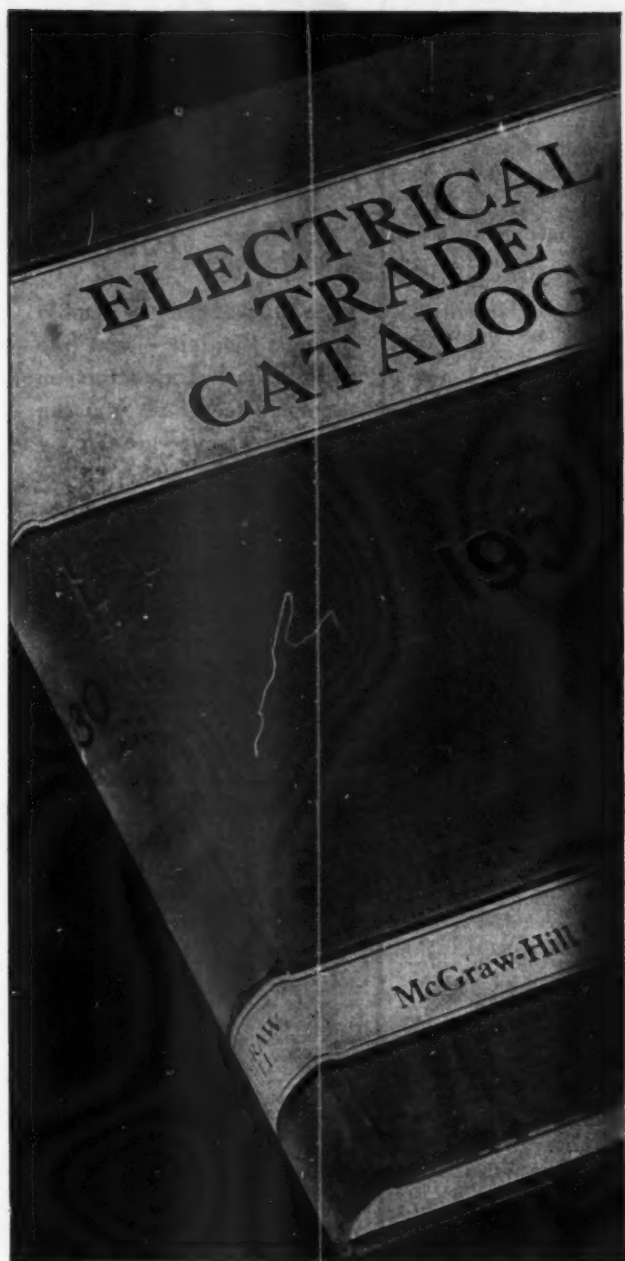
Banks

The Holtzer-Cabot Electric Co.
Boston Chicago

Sales Offices:

Chicago	New York	Baltimore
Philadelphia	Pittsburgh	Cleveland
Syracuse	Detroit	Minneapolis
San Francisco	Los Angeles	

PIONEER MANUFACTURERS OF
COMPLETE SIGNALING SYSTEMS



Use This Collection of Catalogs
Day In and Day Out—

To Help You Design—
Estimate—Get Orders—
Place Orders

Here are the Manufacturers of Electrical Supplies, Equipment, Appliances and Raw Materials who have co-operated to make the 1930 Edition of Electrical Trade Catalogs the finest collection of catalog data that it has so far been our privilege to distribute to the electrical trade—

Ackerman-Johnson Co.
Frank Adam Electric Co.
Ambler Asbestos Shingle & Sheathing Co.
American Blower Corp.
American Lava Corp.
American Steel & Wire Co.
Anaconda Wire & Cable Co.
Ansonia Electric Co.
Autovent Fan & Blower Co.
Baldar Electric Co.
Wallace Barnes Co.
Bead Chain Mfg. Co.
Benjamin Electric Mfg. Co.
Black & Decker Mfg. Co.
Boston Woven Hose & Rubber Co.
Bryant Electric Co.
Buffalo Forge Co.
Central Tube Co.
Circle F Mfg. Co.
Continental-Diamond Fibre Co.
R. W. Cramer & Co.
Detroit Insulated Wire Co.
Diehl Mfg. Co.
Doehler Die Casting Co.
Domestic Electric Co.
Driver-Harris Co.
Dumore Co.
Struthers Dunn, Inc.
Empire Steel Corp.
Engineering Products Corp.
Follinsbee Bros. Co.
Formica Insulation Co.
Fretz-Moon Tube Co.
Fullman Mfg. Co.
General Electric Co.
General Plastics, Inc.
Wm. D. Gibson Co.
Gilby Wire Co.
Graybar Electric Co.
Handy & Harman
H. M. Harper Co.
Harwig Co.
Harvey Hubbell, Inc.
Hunter Pressed Steel Co.
Ideal Commutator Dresser Co.
I-T-E Circuit Breaker Co.
Indiana Rubber & Insulated Wire Co.
Janette Mfg. Co.
Johnson Fan & Blower Co.
Kent Co.
Klemm Reflector Co.
Kiegl Bros.
Leland Electric Co.
Macallen Co.
Massachusetts Machine Shop
Master Electric Co.
Mica Insulator Co.
Misenor Mfg. Co.
Monowatt Electric Corp.
National Carbon Co.
National Slate Association
National Vulcanized Fibre Co.
Newcomb Spring Corp.
Newton Die Casting Corp.
New York Insulated Wire Co.
Peck Spring Co.
Pittsburgh Reflector Co.
Precision Castings Co.
Progressive Mfg. Co.
Reflector & Illuminating Co.
Reliance Automatic Lighting Co.
Republic Steel Corp.
Reynolds Electric Co.
John A. Roebling's Sons Co.
Rome Wire Co.
Scovill Mfg. Co.
Shakeproof Lock Washer Co.
Standard Electric Time Co.
B. F. Sturtevant Co.
Taplet Mfg. Co.
Transformer Corp. of America
United States Rubber Co.
Viking Tool & Machine Co.
Wadsworth Electric Mfg. Co.
P. Wall Mfg. Supply Co.
Walser Automatic Timer Co.
Warren Telechron Co.
Waterbury Button & Molding Co.
Westinghouse Electric & Mfg. Co.

Whenever you need catalog information on the products of any of these companies—turn to their catalog in Electrical Trade Catalogs!

Color Lighting Equipment For Interiors and Exteriors



Free Color Hoods
For lamps up to 60 watts.
(Full and half types.)



Lace Color Hoods
For lamps 75 w. to 300 w.
(Single or two tone effects.)



Color Plates
For flood lights, spots, etc.
(Also square and oblong in shape.)



Color Cylinders
For street lighting units,
wall pockets and decorative
lighting effects.
(Made semi or full circular)

Headquarters for Color

Ask for Illustrated Pamphlet
"PROFITS FROM COLOR"

REYNOLDS
ELECTRIC COMPANY

MANUFACTURERS RECO SIGN FLASHERS
TRAFFIC CONTROLS, SMALL MOTORS, ETC.

2623 W. Congress St. - Chicago, Ill.

DEPENDABLE BELL and BUZZER Enclosed Combination



Gong, Hammer and Wiring Enclosed.

French Gray Enamel Finish.

Operates on 1 to 3 dry-cells or Bell Transformer.

Can be wired to use Bell or Buzzer alone.

3,000,000

LIBERTY BELLS in Service

That Speaks for Their Dependability.

CLIP AND MAIL TODAY

THE LIBERTY BELL MFG. CO.
Minerva, Ohio

Gentlemen: Kindly send me bulletins and price lists of your complete line of Bell and Buzzer combination, Bells and Buzzers.

Name

Address

City..... State.....

of miles distant, but their foremen on out-of-town jobs are told: "Don't write—telephone." An instance is cited where a sudden change was decided on by the owners on a far-off installation. The foreman spent a couple of dollars calling up the office about the change, which involved the laying of four-inch conduit. A few minutes afterward the men were at work and laid the pipe for 18 cents a foot. Had the foreman delayed even a few hours, the figure would have been \$1.10 a foot for suspending it after the concrete had been poured.

AN outstanding job of wiring and lighting is being done by G. A. Pierce, of the J. Gregory Electric Co., Saginaw, Mich., in the new department store of W. C. Wiechmann in that city. Outside of a very modern and adequate service, the most interesting feature is the lighting. A large number of units were installed flush with the ceilings, this being done to eliminate glare and to avoid obstructing the view on the balconies.

AN industrial plant manager recently complained to H. Marshall Smith, of Edward Eaton & Company, New York, that it was costing him too much to heat a portion of his plant over Saturday and Sunday. Smith installed a 57 k. w. capacity heater for them to run while the plant was idle and using no other current. The customer was then able to do his heating for \$5 per night instead of \$35, which was the cost of coal and labor under the old method.

IASKED George Trombley, Trombley Electric Co., Saginaw, Mich., what he had on the fire. "Well, here's an old log cabin we are going to wire," he replied with a grin. But the plans he unrolled looked like the layout for a Union Station, and though it is really made of logs, it proved to be a fine summer home at Black Lake. The installation will cost over \$1,500 and the outstanding problem will be adjusting the pipe runs to the logs.

C. J. GRACE, of Philadelphia, frequently has wiring jobs that require a fifteen or twenty foot ladder. He had considerable difficulty in carrying a regulation ladder on his Ford sedan. Then he hit on the idea of using a window washer's ladder that comes in five foot sections. Now he keeps it in the rear seat of his car.

GUY CARLTON, JR., of Bloomington, Ill., capitalizes on his age. He recently ran a quarter-page ad in the sepia section of the County Centennial edition of the local paper stating that he was Bloomington's oldest electrical contractor, having been in business since 1885. Old pictures of the barn in which he had his first shop attracted much attention.

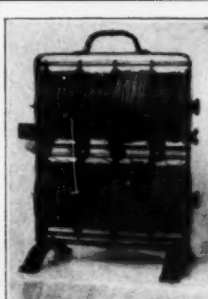


"I
Make
Money—
So Can
You!"

Each issue of the "Wiremold Business Builder"—sent free to Electrical Contractors on request—tells how you can make money—month by month—by following up the WIREMOLD "Modernization-with-Light" Campaign. Send in your name, now—don't miss a single issue.

WIREMOLD

"WBB" HEADQUARTERS
HARTFORD, CONNECTICUT



The
Security
Wire
Reel
Costs
Only

\$12.50

Pays for
Itself in Time
and Wire Saving

Designed for the Dispensing of Annunciator Wire in Installations and Repairs of Signaling Apparatus in Buildings,
Height, 30";
Width, 15";
Depth, 12";
Weight, 12 Lbs.

Its full capacity is 6 standard size spools or 8 spools of smaller size. The big feature of this remarkable device is that one man can operate it, feeding as many as eight different wires at a time from one floor, or any part of a building, without the slightest danger of snarling or tangling the wire at any time. This feature alone, saves the contractor many an hour of precious time on every job, yet it is only one of the SECURITY's numerous advantages over old, cumbersome methods.

SEND THIS COUPON FOR FURTHER DATA

SECURITY APPLIANCE CO.
4076 W. 26th St., Chicago, Ill.

Gentlemen: Please send me further information and circular on The Security Wire Reel.

Name.....

Address.....

Your Jobber.....

General Electric Wiring System

... like a
GOOD BANK
RATING
for YOU!



Your customers often rate your business by the quality of your merchandise.

Your rating is high if you specialize in the General Electric Wiring System because everybody knows General Electric.

The G-E monogram on your window, your stationery, your local advertising enables you to share the prestige of a great name.

It's a further asset to have General Electric Wiring System advertising

working for you—in magazines reaching your customers. And General Electric supplies many trade promotional pieces ready for your use. They build business.

You can sell on the profitable basis of service and quality rather than price because architects, builders and owners everywhere know the General Electric Wiring System adds electrical adequacy, tenant satisfaction and real value to any building... humble cottage or giant skyscraper.

GENERAL  **ELECTRIC** 
WIRING SYSTEM

MERCHANDISE DEPARTMENT

GENERAL ELECTRIC COMPANY

BRIDGEPORT, CONNECTICUT

A BIG MONEY SAVER

Eliminates triple handling—unwinding—measuring and rewinding wire, thus saving time and money.

Manually operated—reels wire into neat coil, automatically counting and registering number of feet.

Strongly built of heavy selected materials so as to last a lifetime.

It Pays for Itself

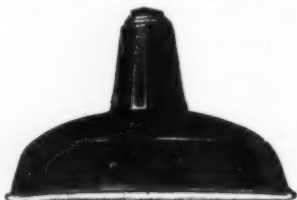


Send for bulletin.
Write us or your jobber.

**Minneapolis Electric
and Construction Co.**

90 S. 12th St.
Minneapolis Minn.

LOW COST Brings More Sales



JACKSON Quality Reflectors

The Industrial reflector market offers big profit opportunities.

On your next bid quote Jackson, High Quality, Low Cost Reflectors. They keep you out of the competitive class and assure you of the contract at a real profit.

Mail This Coupon NOW

Jackson Electrical Company
910 W. Van Buren St., Chicago

Please send me bulletin quoting your
LOW Prices on standard quality
reflectors.

NAME.....
ADDRESS.....
CITY..... STATE.....

was never sure how she wanted her house wired until the wiring was in place. Then she was sure she didn't like it that way. The living room was wired five times. The conduit became shiny from much handling and the house was a year and one-half under construction. The lady thought it great sport to scamper about making changes but her husband called the contractor a robber when he got the bill.

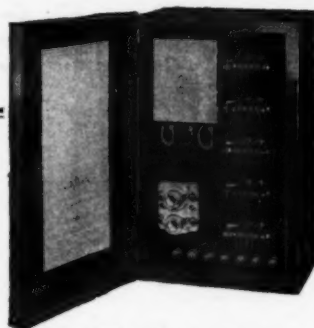
AN interesting fact about the Detroit set-up is that there are practically no "contractor-dealers" in that city. They prefer to play it straight and concentrate on wiring and engineering. Most of them have some merchandise for sale, but this is definitely tied in with wiring activities.

IHAVE heard some of the best minds in contracting confess to leaving off a floor in bidding on a building, but here's one that is away ahead of that, if it only could happen. "How in the world could those two birds be so low on that factory job?" asked one contractor in a crowd. "I dunno," said another, "but here's my guess and I'll stick to it. When they were grabbing for the plans, Al must have got one building and Gus the other, and they just bid in a hurry on what they had."

FURNITURE dealers like to encourage young love, but enough is enough as far as a certain Worcester, Mass. dealer is concerned. Lovers enjoyed the darkness of his building, but never came back to buy bedroom sets. Result: Local contractor gets flood lighting job.

TWO contractors bid on a job of wiring 535 houses in an industrial community. One bid was for \$24,000 and the other for \$17,000, the latter bid getting the job. When about 450 houses were completed, inspection showed so much faulty wiring that the work was suspended, and the original bidder of \$24,000 was called in to take the job over. He had to go over the whole thing and complete it, resulting in a total cost to the owner of \$35,000.

ISURE love the way these contractors find a shortcut on some phase of a job when it means a saving. Cy Dueweke, of the Dueweke-Heckinger Electric Co., Detroit, had to pull three 500,000 CM cables through 3-inch conduit along a building wall in an alley. It would have taken a long time by hand and there was no handy anchorage, so Cy hooked the towline to the front of a company flivver. The car was then backed in short but steady pulls until the cable was through. Money was saved and, although no soapstone was used there was no scratching or cutting of the conductors.



For Replacement Of Storage Batteries

The Type B-12 S-S Rectifier Assembly—complete with transformer, fuse block, rectifier units, terminal leads, enclosed in an approved steel cabinet—is ideal for replacing worn-out storage batteries on equipment where low-voltage direct current is necessary.

Try them on the next job—cost is usually less and they work more efficiently. Available in many standard sizes and types. If the job needs special features, write us. Our engineers will be glad to make recommendations. Complete literature sent on request.

The B-L Electric Mfg. Co.
ST. LOUIS, MO.

B-L
RECTIFIERS

Beating Competition with Brains

Competition is tough in the electrical contracting business these days; and every day it gets worse. Successful contractors have found they can beat fly-by-night competition best by using their brains, and by educating their responsible employees. You can help your head men to keep abreast of the times and save you money by sending each his own copy of **ELECTRICAL CONTRACTING**.

A Complete Handbook of Electricity and Standard Methods of Industrial Wiring--

Here is a book that offers the practical worker a thorough training in electrical wiring for every industrial application. In addition to presenting standard, economical and efficient methods for doing every type of wiring, it also offers a thorough grounding in electrical theory; in the action and application of electrical equipment; the principles of lighting and power circuits; together with much other information needed for the effective handling of this work.

Industrial Electricity and Wiring

by JAMES A. MOYER

Director of University Extension, Massachusetts Department of Education

and JOHN F. WOSTREL

Instructor in Electrical Engineering, and Supervisor in Charge of Industrial Subjects, Division of University Extension, Massachusetts Department of Education.

469 pages, 5 1-2 x 8, 281 illustrations and diagrams—Price \$2.75 postpaid

This is a comprehensive exposition of the entire field of practical electrical wiring. It covers everything from fundamentals of electrical theory right down to the most effective methods for handling the newest electrical equipment.

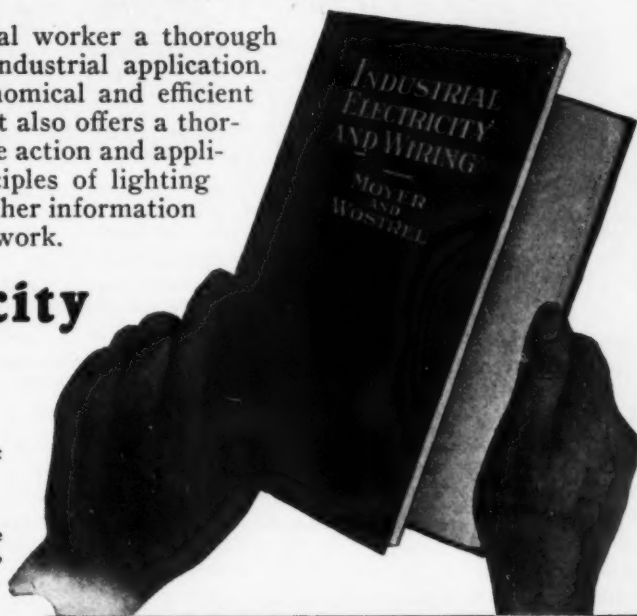
The treatment is simple, progressive and thorough—aimed so that the electrician can acquire the most helpful combination of the fundamentals underlying his problems and an ability to work most economically and efficiently through a knowledge of standard procedure.

Some of the many topics covered

In the first and second chapters you will find a study of effects produced by electric currents, units of measurement, and practical applications. Following this, the book gives you detailed instructions on wiring conduits and moldings; wiring old buildings; wiring for industrial and household appliances; wiring generators, motors and transformers. Then you are given details on industrial and residential lighting, theater services, out-of-door uses, distribution systems, circuit control apparatus and many other applications.

Chapter Summary

1. Fundamental Theory and Units
 2. Splicing and Soldering Wires
 3. Calculation of Wiring Systems
 4. Wiring Methods and Types
 5. Details of Wiring in Conduits and Moldings
 6. Wiring Old Buildings and Unit Costs
 7. Industrial and House Appliances
 8. Electrical Generators and Generator Wiring
 9. Industrial Electric Motors and Motor Wiring
 10. Transformers and Connections
 11. Industrial Wiring
 12. Wiring for Theater Services
 13. Residential Lighting Equipment
 14. Estimating Industrial and House Wiring
 15. Out-door Wiring
 16. Distribution System
 17. Circuit Control Apparatus
 18. Grounding of Systems and Equipment
 19. Wiring for Miscellaneous Services
- Appendix—Index—Reference to National Electrical Code.



281 charts, diagrams and drawings

Everything is clearly illustrated by diagrams, charts and tables. The practice described throughout the book is based on the 1929 National Electrical Code. In the chapters devoted to practical applications of wiring for electric light and power, material on the planning of circuits and estimating costs is included. A glance over the chapter summary will give you some idea of the wide compass of this work—but you should see this book to really grasp its scope. Take advantage of this free examination offer! Send for it to-day!

Send no money—See this book free

At your request we will send you this book for 10 days free examination. You owe it to yourself to see this book—if it can solve just one problem facing you it will amply repay you for any trouble you might experience in sending for it. See this book—use it for 10 days and then decide if this isn't a book you will want to have handy always.

Fill in and mail this coupon — NOW!

McGraw-Hill FREE EXAMINATION COUPON

McGraw-Hill Book Co., Inc., 370 Seventh Avenue, New York.

You may send me on 10 days' approval Moyer and Wostrel's INDUSTRIAL ELECTRICITY AND WIRING. Price \$2.75 postpaid. I agree to remit for the book or return it postpaid within ten days of receipt.

Signed (Please Print)

Address

City and State

Official Position

Name of Company
(Books sent on approval to retail purchasers in the U. S. and Canada only.) E.C. 10-30

Manufacturers News

A department for the announcement of activities of manufacturers that are of interest to contractors, such as changes in executive personnel, branch offices, new products, etc.

General Cable to Operate as Single Organization

Effective October 1, 1930, the sales, manufacturing and accounting operations of the A-A Wire Co., American Insulated Wire & Cable Co., Atlantic Insulated Wire & Cable Co., Detroit Insulated Wire Co., Dudlo Manufacturing Co., Peerless Insulated Wire & Cable Co., Phillips Wire Co., Rome Electrical Co., Rome Wire Co., Safety Cable Co., Standard Underground Cable Co., and Southern States Cable Co., which have operated as separate divisions, will be combined into a single organization known as General Cable Corporation, with offices at Rome, N. Y.

This plan of operation gives complete electrical wire and cable sales and engineering service through 22 General Cable offices, simplifying the dealings with the company by providing one contact for all sales, engineering and sales service. All types of electrical wires, cables, coils and accessories can be obtained from one source of supply.

This change also simplifies the accounting for customers and the General Cable Corp., by the amalgamation of all financial accounts of the corporation at the headquarters of the treasurer's and comptroller's departments, Rome, N. Y.

The corporation has also made a revised schedule on real and spool charges to take effect on October 1, 1930.

* * *

G. E. Adds to Photo-Electric Relay Line

A number of new items have been added by the General Electric Co., Schenectady, N. Y., to its line of photo-electric relays for the control of industrial machinery and other devices. In addition to the original unit, designated CR-7505-A-2, an alternating-current relay, there are

now introduced the following: A direct-current relay; an outdoor weather-proof, a-c. relay; an interior light control unit; an indoor light source, a-c. or d-c., and an outdoor, weatherproof light sources, for alternating current. With these additions to the line, units are provided for a large variety of applications, both indoors and outdoors.

The photo-electric relay is a device which functions to control electrically operated equipment as a result of a change in the intensity of light. Many industrial or other operations can be so controlled. In addition, many operations which can be arranged to cause a change of light can be so controlled. A machine, for example, which travels in a certain direction for a certain distance and then stops or reverses, is a typical application. When the traveling mechanism reaches its limit, it would interrupt a beam of light falling on the photo-electric tube and thus cause the control device to function.

* * *

Edison Lamp Appoints McFee District Manager

C. W. McFee has been appointed district sales manager, East Central District, with offices in Cleveland, by the Edison Lamp Works, replacing L. W. Teegarden, who resigned August 1. Mr. McFee was formerly manager of the Cincinnati office and has been associated with the General Electric Co. since October, 1910.

Since his first connection with the General Electric Co. in the supply department of the Cincinnati office, Mr. McFee has held several positions in different departments, until 1924 when he became local office manager at Cincinnati, which position he has held until his recent appointment to the position of district manager.

Westinghouse to Dedicate Memorial

On October 6 the Westinghouse Electric & Manufacturing Co., Pittsburgh, Pa., will dedicate the George Westinghouse memorial, created by Daniel Chester French, which will be located in Schenley Park, Pittsburgh.

The construction of this memorial and its dedication is in charge of a board of trustees, comprised of the following: Chairman, A. L. Humphrey, president of Westinghouse Airbrake Co.; A. W. Robertson, chairman of the board, Westinghouse Electric & Manufacturing Co.; F. W. Merrick, president of the Westinghouse Electric & Manufacturing Co.; E. M. Herr, vice chairman of the board, Westinghouse Electric & Manufacturing Co., and John F. Miller, vice chairman of the board, Westinghouse Airbrake Co.

Erection of the memorial was made possible by appropriation and subscriptions among 60,000 employees of Westinghouse industries in United States and other countries.

Invitations have been sent to hundreds of the most eminent persons in America to attend the affair as guests of honor, and a banquet will follow the dedication.

* * *

Fretz-Moon Appoints Corey Company Representatives

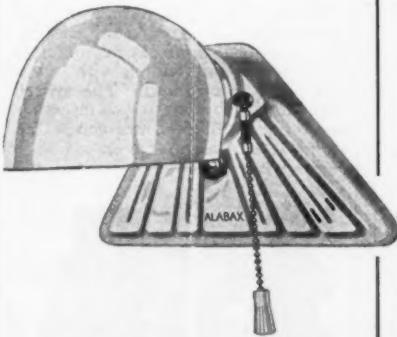
The R. B. Corey Co., 81 Murray St., New York, will represent the Fretz-Moon Tube Co., Butler, Pa., in the metropolitan district for rigid conduit. This district covers northern New Jersey, New York state to and including Albany, and Connecticut to and including Bridgeport.

Corey Co. will carry a complete stock of both electric and hot dipped galvanized conduit in its warehouse.

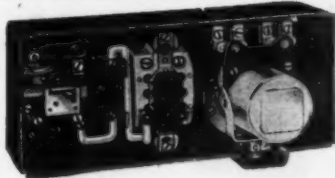
New Electrical Products



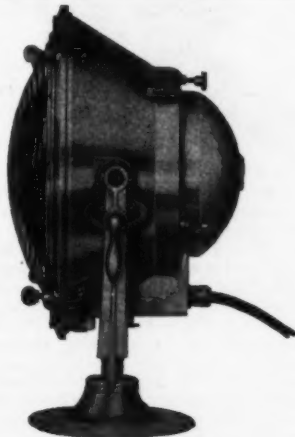
The General Electric Co., Schenectady, N. Y., announces a convenient reversing equipment for small motors known as CR-7009-B-19. This switch is designed to handle squirrel-cage motors rated $1\frac{1}{2}$ h. p. at 110 volts, and 2 h. p. at 220, 440, 550 and 600 volts, 25 to 60 cycles. The switch consists of two contactors mechanically interlocked, having four sets of contacts and terminals, three being contact sets for power circuits and one for holding circuit of the coil. The terminals are front connected and marked. The equipment is mounted on a compound base for mounting in an enclosing case. The case is suitable for wall mounting and has removable cover and knock-outs for incoming and outgoing leads.



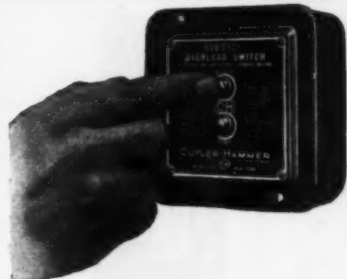
Alabax sidewall brackets, triangular in shape and modernistic in design, are announced by Pass & Seymour, Inc., Syracuse, N. Y. Type AL-2990 has a pull chain and convenience outlet and AL-2991 is the keyless type without convenience outlet. A $2\frac{1}{4}$ in. halfshade is held in position by means of an inside clamping ring. The base used on these brackets will fit all types of outlet boxes and has a deep recess in back permitting it to come flush with wall, even though box extends as much as $\frac{1}{4}$ in. from the walls surface.



The Allen-Bradley Co., Milwaukee, Wis., announces bulletin 830 pressure switch in sizes B and C for starting and stopping compressor and pump motors. This switch is compact, being about the size of a small outlet box, and is made in four forms in various combinations with or without overload breakers, disconnect switches and fuse clips. Size B is rated at 1 h. p. 110-220 volts for d.c. and 1 h. p. 110 volts and 2 h. p. 220 volts for a.c. Size C is rated up to 5 h. p. and for larger ratings size B is used as a pilot control for magnetic starters of any rating.



Westinghouse Electric & Mfg. Co., Pittsburgh, Pa., are manufacturing an airways on-course light used with rotating beacon. This unit has a cast silico-aluminum alloy body housing focusing mechanism on which is mounted a mogul screw socket; a split spherical mirror mounted on a cradle provided with three adjusting screws, threaded into body and spaced 120 deg. apart; inside of body is finished with a matte black Japan enamel; door consists of two concentric rings joined by six ribs; watertight bushing provided at rear of body for No. 12 duplex, rubber-covered, flexible cord, 15 ft. of which is furnished with unit. A bronze locking handle and segment controls the angle of inclination of unit, and the door and outside of body are sprayed with metallic aluminum. The on-course light is equipped with either a 500-watt or 1000-watt T-20 airway beacon lamp, with peep sights provided for correctly focusing the lamp.



Bulletin 9103 two-pole, push button operated starting switch with thermal overload relays is announced by Cutler-Hammer, Inc., Milwaukee. This switch can be used with d.c. motors up to $\frac{1}{4}$ h. p. 115 volts and $\frac{1}{4}$ h. p. 230 volts, or with a.c. motors, single, two or three-phase up to 2 h. p. 110 to 550 volts. It has double-break, silver contacts and quick-break contact mechanism. Enclosed switch has conduit knock out holes in top and bottom for easy wiring. Cover can also be sealed. The switch, being small in size, can be mounted right on machine.

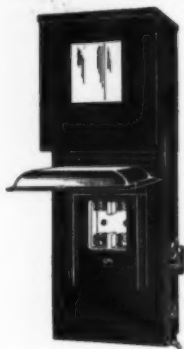


The Thomas & Betts Co., New York City, announce a new line of conduit outlets, especially designed for use with thin wall conduit, including all types of rectangular, round and F series known as "Tubellets," together with covers and porcelain wiring devices. These "Tubellets" are made of malleable iron and are rust proofed with "Tabolite."



Cutler-Hammer, Inc., Milwaukee, Wis., announces a concealed type receptacle, made of moulded Thermoplastic. This unit has a screw shell which is an integral part of the base so that it is only necessary to mount and wire it, then twist outer shell on to base. The outer shell is permanently held to base without screws. It is made in two types, with or without shade holder groove, and is rated at 660 watts, 250 volts.

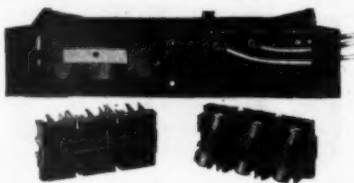
New Electrical Products



The Wadsworth Electric Mfg. Co., Covington, Ky., announces an outdoor and weatherproof accessible fuse meter service switch. Outdoor type has conduit knockouts in bottom and sides and weatherproof type has conduit knockouts in bottom only. Switch cabinets of 30 and 60 amp. are constructed of 16 gauge and 100 amp. of 14 gauge cold rolled steel. Switch cabinet is covered with aluminum and baked, then covered with baked black enamel. It has a glass window for reading meter set between cork gaskets and attached to main cover by means of a formed band; slotted brass rod used for sealing (padlock can be inserted instead of rod); bossed cover with brass spring hinges cover mechanism; and meter board of $\frac{3}{8}$ in. dressed cypress creosote dipped. Mounting feet space switch $\frac{1}{2}$ in. from wall.



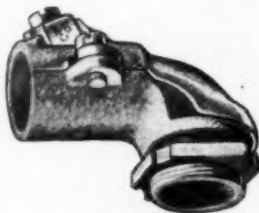
Greenlee Tool Co., Rockford, Ill., announces a conduit bender made in two sizes, No. 770 for bending $1\frac{1}{4}$ to 3-inch conduit and No. 775 for bending $2\frac{1}{2}$ to 4-inch sizes. Bending is accomplished by hydraulic pressure, forcing a shoe against the conduit, which is held by 2 rotating support castings arranged to accommodate different sizes of conduit. Pressure is released by pushing down on release stop block below injector lever and then lowering handle as far as possible. Conduit is bent horizontally so that any length can be put in machine and bent to complete circle if desired.



Bull Dog Electric Products Co., Detroit, Mich., announces the addition to its line of dead front fusible switch units of a double branch, 3 pole, 30 amp. bakelite unit. The unit illustrated above is a double branch, 3 pole, 39 amp. bakelite fusible switch with fusible switch heads removed, also insulating cover in the right section, disclosing the quick and easy wiring connections.



The Borden Co., Warren, Ohio, is manufacturing a Beaver 3-way die stock, a "companion tool" to the No. 3 Beaver, Jr. ratchet with dies and caps being interchangeable. This die stock has electrically heat-treated die segments, square in shape; the dies are "driven" by the solid body of the tool; a pressed steel die retaining; large openings in body; long and heavy handle bosses are provided, and full width dies which can be inverted for threading short nipples.



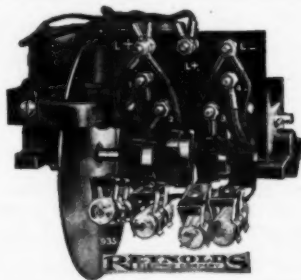
Angle connectors, embodying the T&B "Tite-Bite" grip, are announced by Thomas & Betts Co., New York, which are made in two pieces, the connector body and cap. These connectors are said to take a wider range of cable sizes than other types and are made of malleable iron, plated with "Tabolite" finish. These connectors are made in sizes $\frac{3}{4}$ in. 90 deg. to 1 in. 90 deg. To slide cap on or off body, simply loosen or tighten the two screws.



A short type LaSalle unit, known as No. 9010, has been added to the line of the Inland Glass Works, Inc., Chicago, and is made with a crystal bottom, designed to throw more light downward.



Arrow Electric Division of The Arrow-Hart & Hegeman Electric Co., Hartford, Conn., is manufacturing a ceiling pull switch with outlet box cover in one unit. The switch cover is held by one screw in center and combination comes made up with $3\frac{1}{4}$ in. or 4 in. cover.



Reynolds Electric Co., Chicago, Ill., announces the Reco mercury contact flasher in "on and off," "speller" and "speed" types for a.c. 110 volt, 25-30-40-50 and 60 cycles only. The drive consists of disc type motor having speed range of 25 percent slow or fast. It is compactly built and mounted in steel cabinet.

SILVEY HICKEYS

Won't Slip, Crush nor Kink



Made in 1/4", 3/8", and 1-in. sizes. Patented.

A deep groove on the inside of the bend removes pressure where pipe is shortening and thickening; allows it to flow outward instead of pushing it inward. Compare its work with work done by any other hickey. Get a set. Your money back if you're dissatisfied for any reason. Thousands sold without complaint. Electricians swear by it.

Ask Your Jobber

Jobbers everywhere have Silvey Hickeys in stock. If yours will not supply you, we will ship direct.

SILVEY PIPE BENDER COMPANY
2125 Brighton Ave. Kansas City, Mo.

E-Z WIRE STRIPPER

A HANDY TOOL



This inexpensive tool strips wire of 10 to 20 gauge 20 times faster than usual methods.

A MONEY BACK GUARANTEE with every E-Z Wire Stripper. Send for yours now.

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PYRAMID PRODUCTS CO.

2315 South State Street

Chicago, Ill.

MARTIN



Portable Vise Stand and Pipe Bender

Made in Two Sizes

—small stand with chain vise 2 in. cap.; with binged vise 2 1/2 in. capacity. —Large stand with chain vise 4 in. cap.; with binged vise 4 1/2 in. capacity.

Do away with that make-shift bench. Carry the MARTIN with you anywhere... A space-time saver for cutting and threading pipe or conduit up to 2 1/2 in. Sold on approval. Write today.



H. F. MARTIN & SONS
Owensboro, Ky.

Keep Up-to-Date

By reading these pages you will acquaint yourself with what is newest and best in electrical supplies and equipment. When communicating with an advertiser mention

Electrical Contracting

The General Electric Co., Schenectady, N. Y., announces new bulletins as follows: Gea-1280, Centrifugal Compressors; Gea-1290, Type MT Control Equipment; GEA-211A superseding GEA-211; GEA-750B superseding GEA-750A; GEA-858A superseding GEA-858; GEA885A superseding GEA-885; GEA-388A superseding GEA-388; GEA-1035A superseding GEA-1035; GEA-1285, Geared-Type Limit Switches; GEA-977B superseding GEA-977A; GEA-1265A superseding GEA-1265; GEA-1285, Track-Type Limit Switches; GEA-1295, Edgewise-Wound Resistors; GEA-394B superseding GEA-394A; GEA-530B superseding GEA-530A; GEA-481C superseding GEA-481B; GEA-1096A superseding GEA-1096 and GEA-1269.

The Henkel "Edge-Lite" Corp., Chicago, has issued a catalog illustrating and describing proper light distribution in the home, apartment, hotel or office building, including a complete description of the "Edge-Lite" bathroom cabinets, mirrors and vanities. This catalog is prepared for architects, builders, interior decorators and lighting experts.

The National Lamp Works, Nela Park, Cleveland, is cooperating extensively with the Add-A-Light Campaign, which the electrical and related industries are sponsoring during October and November and is advertising in leading publications during this campaign.

Inland Glass Works, Chicago, has opened new sales and executive offices, including a small display room, in the Twenty North Wacker Drive Building, Chicago.

The Roller-Smith Co., 233 Broadway, New York, has appointed J. K. Webb, 601 Allen Building, Dallas, Tex., district sales agent for Texas.

Classified Advertising

Position Wanted: As manager or superintendent of wiring or fixture department, have eight years' experience at electrical contracting. Will consider any offer pertaining to electrical or fixture work, such as salesman. Prefer West Coast, but will locate anywhere. Address Box 1030, Electrical Contracting, 520 No. Michigan Ave., Chicago.

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WIRE WITH



PATENTED

Wire Connectors



FAST

SRK Connectors are 20 times faster than the old solder-tape method.

SAFE

SRK Connectors are safe, they assure underwriter approval.

STRONG

SRK Connectors assure a strong connection.

DEPENDABLE

SRK Connectors are made of high quality material and workmanship assuring dependability.

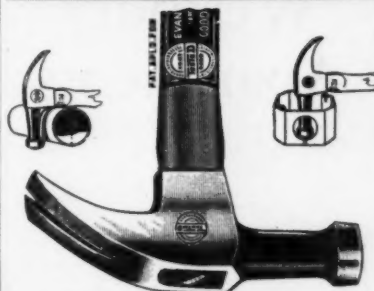
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SAMPLES SENT ON REQUEST

JIFFY WIRE CONNECTOR COMPANY
HACKENSACK, N. J.

General Sales Office
G. Denn. Montgomery, Jr.
458 Broadway, New York City
Phone Canal 7533



Electrician's Hammer

\$2

An electrical mechanic designed this hammer. The long poll (2 inches) makes it easy to reach into outlet boxes, over pipes and into corners. The claw is built for prying; the handle is seasoned hickory.

4,787 Electricians Use It!

MAIL COUPON TODAY

Evansville Tool Works, Inc.
Evansville, Indiana.

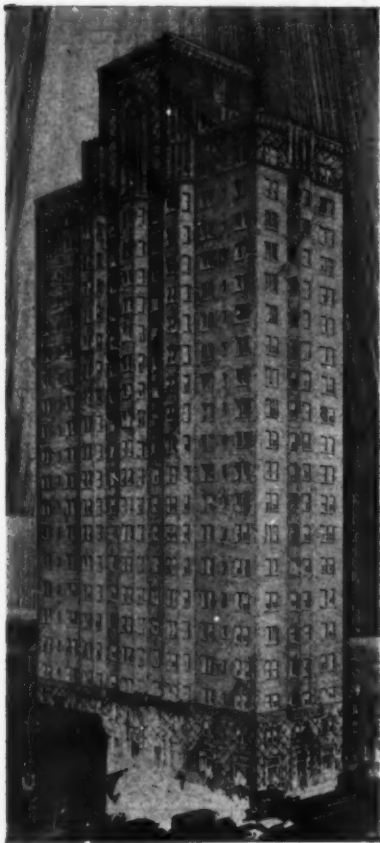
Gentlemen:

I am enclosing my P. O. Money Order for \$2.00. Please send me the No. 77 Electrician's Hammer at once.

Hdwe. Dealer.....

My name.....

Address



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Hahn and Baylinson *Architects*
Charles F. Leopold
Electrical Engineer
Foundation Company
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with up-to-date

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PERMAFLECTORS *for* FACTORY LIGHTING

Every spindle—every foot of fabric—every mechanical part is plucked out of darkness by the searching rays of Permaflexor Lighting, and held clear-cut before the eyes of operators, inspectors and mechanics.

The electrical contractor who made this Permaflexor installation in the Camden Hosiery Mill, Camden, N. J., knows that his customer's employees are working under ideal lighting conditions.

Factory illumination offers a great field for electrical contractors. The Permaflexor record shows a product so nearly perfect that of all the "Pittsburgh" reflectors made since we began using our secret coppering process on August 1st, 1916, not even 1/1000th of 1%—not even one in one hundred thousand—has ever been reported to us as having the backing crack, check or peel, or the silver plating tarnish.

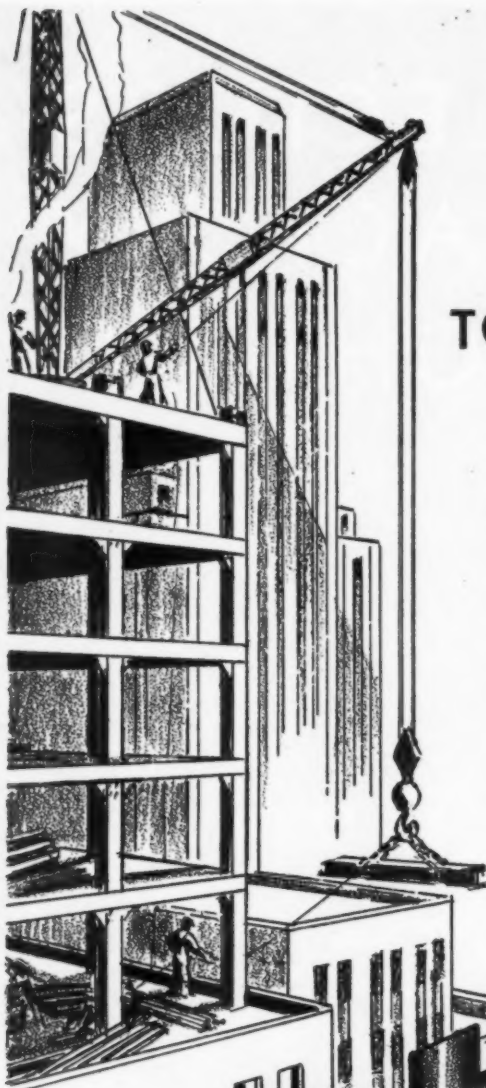
Our engineers will gladly work with you in solving any lighting problem. Write for Catalog.

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THE SILVERED GLASS REFLECTORS WITH
THE *Permanent* REFLECTING SURFACE



MADE Glossy TO RESIST THE ELEMENTS

MOHAWK CONDUIT is made smooth and glossy. Inside the wires are safe and outside the protection of tough enamel stops the ravages of time and the elements.

MOHAWK RIGID CONDUIT has the approval of contractors; it is made heavy; impervious to acids; durable as the building.—Tough Enamel; smooth, glossy finish. Pipe that bends so easily, you hardly realize it is steel.—

And, clean even threads that make work a joy.



Mohawk Conduit may be had in either Indian Black (enamel) or Indian White (galvanized). Send for the *new* Book of facts; contains tables, weights, sizes; free to contractors.

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BUSS



50% OVERLOAD

BUSS



100% OVERLOAD

BUSS



150% OVERLOAD

Blowing Time of BUSS SUPER-LAG Fuse Compared to Other Makes.

These charts show results obtained in tests made by Electrical Testing Laboratories of New York as reported by them August 25th, 1930 on the 200 ampere 250 volt size. 30, 60, 100, 400 and 600 ampere sizes as reported by them show similar results.

Blowing times shown on one overload are not comparable with those at other overloads because a different scale is used on each chart for convenience in comparing results.

SOMETHING NEW — A fuse built to keep the plant operating — not just to protect the equipment — a fuse with a Time-Lag far in excess of any other fuse

AN ANSWER TO A FELT NEED . . .

Thoughtful fuse users have for many years expressed the need of a fuse that would give dependable protection yet would not blow and cause unnecessary shut-downs every time a harmless overload occurred. They knew that many fuses blew on overloads where the magnitude of the overload in relation to the length of time it existed was not sufficient to cause any harm to electrical apparatus, wiring or equipment—yet these harmless overloads were bound to occur and fuses blew and useless and costly shut-downs were the result.

BUSS SUPER-LAG Fuses are an answer to this long felt need for a fuse that would blow safely on short-circuits, promptly on dangerous overloads and still not blow every time a harmless overload occurred.

WHAT IT MEANS TO THE USER . . .

When a fuse blows on a *harmless overload* it causes an unnecessary shut-down that is *unavoidably costly to the user*. Motors stop, machines stall and production ceases. Operators stand idle until the electrician has replaced the fuse. Workers leave their work and time is lost in getting operations back to normal. Process material is often subject to spoilage. Added to all this cost is the electrician's time and the new link or fuse.

It can readily be seen that a fuse that does not blow every time a harmless overload occurs will save the user money by greatly reducing the cost of his electrical protection.

To take advantage of this new scientific advancement in Electrical Protection just specify "BUSS SUPER-LAG Renewable Fuses" or if you want more data, drop us a line.

BUSSMANN MANUFACTURING COMPANY, 2536 W. University St., St. Louis, Mo.

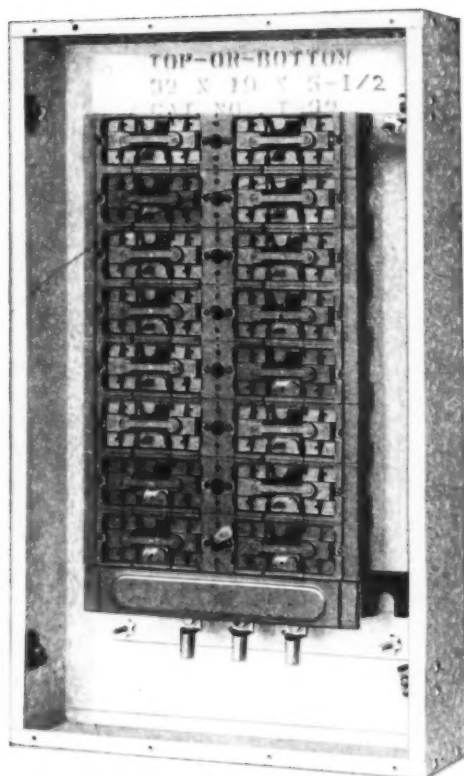
A Division of the McGraw Electric Company

THE **BUSS SUPER-LAG** FUSE

NOW!

Dead Face Bull Dog Controls with NEW SAFtoFUSE Units

COST LESS THAN LIVE FACE PANELS



16 Circuit SAFtoFUSE Panel with
Gutter Covers and Front Removed

Contractors! Here's the best news the trade has had in a long time. BULL DOG has perfected a SAFtoFUSE unit to make dead face panels undersell, in many cases, live face panels.

Realize what this means. These new BULL DOG SAFtoFUSE units—built to BULL DOG'S well-known high standards—will meet the demands of both quality and price buyers.

Savings of 40%!

Just compare the cost of these new BULL DOG Controls with other dead face panels and you'll find the saving is often over 40%. Compare their prices with old style live face panels and you will realize their economy.

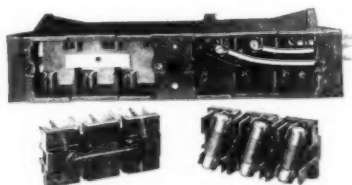
Be the first to reap the profits from this new line. Show your customers how cheaply BULL DOG quality can now be bought. Clip the coupon, write or wire us for prices, discounts and further information.

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DETROIT MICHIGAN

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SAFtoFUSE (fusible switch) Branch Circuit Units,
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insulating cover removed, showing quick and
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